Appendix E
Red Flag Investigation

INDIANA DEPARTMENT OF TRANSPORTATION

100 North Senate Avenue
Room N642
Indianapolis, Indiana 46204

PHONE: (317) 232-5113
FAX: (317) 233-4929

Eric Holcomb, Governor
Joe McGuinness, Commissioner

Date: March 19, 2020

To: Site Assessment & Management
Environmental Policy Office - Environmental Services Division
Indiana Department of Transportation
100 N Senate Avenue, Room N642
Indianapolis, IN 46204

From: Laney Walstra
Greenfield District
1104 Prospect St.
Indianapolis, Indiana
laney@green3studio.com

Re: RED FLAG INVESTIGATION
DES 1600828, State Project
Bridge Project
SR 26 over Salamonie River, 0.78 miles East of US 27
Jay County, Indiana

PROJECT DESCRIPTION

Brief Description of Project: The Federal Highway Administration (FHWA) and Indiana Department of Transportation (INDOT) intend to proceed with a bridge project on SR 26 over Salamonie River in Jay County, approximately 0.78 miles East of US 27. The existing structure is a Steel Parker Through Truss bridge with a 28'-0" bridge roadway width and two travel lanes. The current preferred alternative is a full bridge replacement to a continuous composite prestressed concrete bulb tee beam bridge with three spans. Riprap will be placed at the end bents, and piers. Two piers will be added in the replacement. Approach work will occur, with shoulder paving, and guardrail work. Regrading of ditches may occur due to erosion.

Bridge and/or Culvert Project: Yes ☒ No ☐ Structure # _026-38-03430 A (NBI 007040)_
If this is a bridge project, is the bridge Historical? Yes ☒ No ☐ , Select ☐ Non-Select ☒
(Note: If the project involves a historical bridge, please include the bridge information in the Recommendations Section of the report).

Proposed right of way: Temporary ☒ # Acres _TBD_ Permanent ☒ # Acres _TBD_, Not Applicable ☐

Type of excavation: 250 CYD of common excavation, 500 CYD of waterway excavation, and 720 CYD of fill

Maintenance of traffic: Maintenance of Traffic is anticipated to be a full closure with a detour.

Work in waterway: Yes ☒ No ☐ Below ordinary high water mark: Yes ☒ No ☐

State Project: ☒ LPA: ☐

Any other factors influencing recommendations: Plans have not been finalized at this time.

INFRASTRUCTURE TABLE AND SUMMARY

Infrastructure			
Religious Facilities	**1***	Recreational Facilities	**2**
Airports[1]	**1**	Pipelines	**N/A**
Cemeteries	**1**	Railroads	**N/A**
Hospitals	**N/A**	Trails	**6**
Schools	**2**	Managed Lands	**N/A**

Religious Facilities: One* (1) religious facility is located within the 0.5 mile search radius. Immaculate Conception Catholic Church (506 E Walnut St) is not mapped on the GIS data and is located approximately 0.42 mile northwest of the project area. No impacted is expected.

Recreational Facilities: Two (2) recreational facilities are located within the 0.5 mile search radius. The nearest facility, East Elementary School, is adjacent to the project area. Coordination with East Elementary School will occur.

Airports: No infrastructure resources were identified within the 0.5 mile search radius. Although not located within the 0.5 mile search radius, one (1) public-use airport, Portland Municipal, is located within 3.8 miles (20,000 feet) of the project area. The public airport is located approximately 1.69 miles northwest of the project area; therefore, early coordination with INDOT Aviation will occur.

Cemeteries: One (1) cemetery is located within the 0.5 mile search radius. Unknown Cemetery (SHAARD ID: CR-38-68) is within the project area. A Cemetery Development Plan may be required since this project is within 100 feet of the cemetery. Coordination with INDOT Cultural Resources will occur.

Trails: Six (6) trail segments are located within the 0.5 mile search radius. One (1) trail (Additional Nature Trails, Completed) is located adjacent to the project area. Coordination with Portland Parks and Recreation Department will occur.

Schools: Two (2) schools are located within the 0.5 mile search radius. East Elementary School (705 E. Tallman Street) is adjacent to the project area. Coordination with East Elementary School will occur.

Note to Reader: The trail named Additional Nature Trails, Completed is mapped incorrectly and is actually located in Hudson Family Park. Based on coordination with INDOT SAM, because no substantive changes to this report are needed, an addendum is not necessary.

WATER RESOURCES TABLE AND SUMMARY

Water Resources			
NWI - Points	**N/A**	Canal Routes - Historic	**N/A**
Karst Springs	**N/A**	NWI - Wetlands	**7**
Canal Structures – Historic	**N/A**	Lakes	**6**
NPS NRI Listed	**N/A**	Floodplain - DFIRM	**5**
NWI-Lines	**8**	Cave Entrance Density	**N/A**
IDEM 303d Listed Streams and Lakes (Impaired)	**N/A**	Sinkhole Areas	**N/A**
Rivers and Streams	**7**	Sinking-Stream Basins	**N/A**

NWI-Wetlands: Seven (7) NWI-wetlands are located within the 0.5 mile search radius. Three wetlands are located within or adjacent to the project area. A Waters of the US Report will be prepared and coordination with INDOT ES Ecology and Waterway Permitting will occur.

Lakes: Six (6) lakes are located within the 0.5 mile search radius. The nearest lake is located approximately 0.02 mile north of the project area. No impacts are anticipated.

Floodplain: Five (5) floodplain polygons are mapped within the 0.5 mile search radius. The closest floodplain is associated with the Salamonie River and is located within the project area. Coordination with INDOT ES Ecology and Waterway Permitting will occur.

NWI-Lines: Eight (8) NWI-lines are located within the 0.5 mile search radius. The nearest NWI-line is associated with the Salamonie River located within the project area. A Waters of the US Report will be prepared and coordination with INDOT ES Ecology and Waterway Permitting will occur.

Rivers and Streams: Seven (7) river and stream segments are located within the 0.5 mile search radius. The nearest stream is the Salamonie River and is located within the project area. A Waters of the US Report will be prepared, and coordination with INDOT Ecology and Waterway Permitting will occur.

URBANIZED AREA BOUNDARY SUMMARY

Urbanized Area Boundary (UAB): This project lies within the Portland UAB; however, a Rule 13 Permit from IDEM has not been issued. No further coordination is necessary at this time.

MINING AND MINERAL EXPLORATION TABLE AND SUMMARY

Mining/Mineral Exploration			
Petroleum Wells	**N/A**	Mineral Resources	**N/A**
Mines – Surface	**N/A**	Mines – Underground	**N/A**

Explanation: No mining and mineral resources were identified within the 0.5 mile search radius.

HAZARDOUS MATERIAL CONCERNS TABLE AND SUMMARY

Hazardous Material Concerns			
Superfund	**N/A**	Manufactured Gas Plant Sites	**N/A**
RCRA Generator/ TSD	**N/A**	Open Dump Waste Sites	**N/A**
RCRA Corrective Action Sites	**N/A**	Restricted Waste Sites	**N/A**
State Cleanup Sites	**N/A**	Waste Transfer Stations	**N/A**
Septage Waste Sites	**N/A**	Tire Waste Sites	**N/A**
Underground Storage Tank (UST) Sites	**1**	Confined Feeding Operations (CFO)	**N/A**
Voluntary Remediation Program	**N/A**	Brownfields	**1**
Construction Demolition Waste	**N/A**	Institutional Controls	**N/A**
Solid Waste Landfill	**N/A**	NPDES Facilities	**2**
Infectious/Medical Waste Sites	**N/A**	NPDES Pipe Locations	**3**
Leaking Underground Storage (LUST) Sites	**1**	Notice of Contamination Sites	**N/A**

Underground Storage Tank (UST): One (1) Underground Storage Tank (UST) is within the 0.5 mile search radius. East Elementary School (705 Tallman Ave, and AI 20603) is located approximately 0.16 mile west of project location. Documentation on the IDEM Virtual File Cabinet (VFC) indicates that one UST was in use 1989. No impact is expected.

Leaking Underground Storage (LUST) Site: One (1) Leaking Underground Storage Tank (LUST) is within the 0.5 mile search radius. Coco-Cola Bottling (510-520 E Arch St, AI 16880) is located approximately 0.49 mile northwest of project site. IDEM issued a No Further Action Approval Determination Pursuant to Risk Integrated System of Closure on March 13, 2012. No impact is expected.

Brownfields: One (1) Brownfield is within the 0.5 mile search radius. Joy Property (420-422 E Water St, AI 106586) is located approximately 0.45 mile west of project site. No impact is expected.

NPDES Facilities: Two (2) NPDES Facilities are located within the 0.5 mile search radius. The nearest facility, SR-26 NPDES Facility (SR 26 & US HWY 26, Permit Number: INR10J274), is located approximately 0.35 mile west of the project site. No impact is expected.

NPDES Pipe Locations: Three (3) NPDES Pipe Locations are located within the 0.5 mile search radius. Portland WWTP has one inactive and two active NPDES Pipe Locations. The nearest location is approximately 0.26 mile southwest to the project site. No impact is expected.

ECOLOGICAL INFORMATION SUMMARY

The Jay County listing of the Indiana Natural Heritage Data Center information on endangered, threatened, or rare (ETR) species and high quality natural communities is attached with ETR species highlighted. A preliminary review of the Indiana Natural Heritage Database by INDOT Environmental Services did not indicate the presence of ETR species within the 0.5 mile search radius.

A review of the USFWS database did not indicate the presence of endangered bat species in or within 0.5 mile of the project area. The August 20, 2019 inspection for Bridge 026-38-03430 A states that no evidence of bats was seen or heard

under the bridge). The range-wide programmatic consultation for the Indiana bat and Northern long-eared bat will be completed according to "Using the USFWS's IPaC System for Listed Bat Consultation for INDOT Projects."

RECOMMENDATIONS SECTION

HISTORIC RESOURCES: This project involves a non-select historic bridge located on SR 26 over the Salamonie River (Structure Number: 026-38-03430 A, NBI: 007040). Coordination with INDOT CRO will occur.

INFRASTRUCTURE:

Recreational Facilities: Two (2) recreational facilities are located within the 0.5 mile search radius. East Elementary is adjacent to the project area. Coordination with East Elementary School will occur.

Airports: Although not located within the 0.5 mile search radius, Portland Municipal a public-use airpost, is located within 3.8 miles (20,000 feet) of the project area. The public airport is located approximately 1.69 miles Northwest of the project area; therefore, early coordination with INDOT Aviation will occur.

Cemeteries: Unknown Cemetery (SHAARD ID: CR-38-68) is adjacent to the project area. A Cemetery Development Plan may be required since this project is within 100 feet of the cemetery. Coordination with INDOT Cultural Resources will occur.

Trails: One (1) trail (Additional Nature Trails, Completed) is located adjacent to the project area. Coordination with Portland Parks and Recreation Department will occur.

Schools: One (1) school is located within the 0.5 mile search radius. East Elementary is adjacent to the project area. Coordination with East Elementary School will occur.

WATER RESOURCES:

The presence of the following water resources will require the preparation of a Waters of the US Report and coordination with INDOT ES Ecology and Waterway Permitting:

- Three (3) wetlands are located within and adjacent to the project area.
- One (1) stream segment, Salamonie River, flows through the project area.
- One (1) NWI-line, Salamonie River, flows through the project area.
- This project is located within the floodplain of the Salamonie River (coordination only).

URBANIZED AREA BOUNDARY: N/A

MINING/MINERAL EXPLORATION: N/A

HAZARDOUS MATERIAL CONCERNS: N/A

ECOLOGICAL INFORMATION: Coordination with USFWS and IDNR will occur. The range-wide programmatic consultation for the Indiana bat and Northern Long-eared bat will be completed according to "Using the USFWS's IPaC System for Listed Bat Consultation for INDOT Projects."

Nicole Fohey-Breting Digitally signed by Nicole Fohey-Breting Date: 2020.03.19 13:49:13 -04'00'

INDOT Environmental Services concurrence: _____(Signature)

Prepared by:
Laney Walstra
Ecologist
Green 3, LLC

Graphics:

Note to Reader: the Site Location Map in Appendix B-2 was included in this report; it was deleted here to avoid duplication.

SITE LOCATION: YES

INFRASTRUCTURE: YES

WATER RESOURCES: YES

URBANIZED AREA BOUNDARY: YES

MINING/MINERAL EXPLORATION: N/A

HAZARDOUS MATERIAL CONCERNS: YES

Red Flag Investigation - Infrastructure
SR 26 over Salamonie River, 0.78 miles East of US 27
Des. No. 1600828 , Bridge Project
Jay County, Indiana

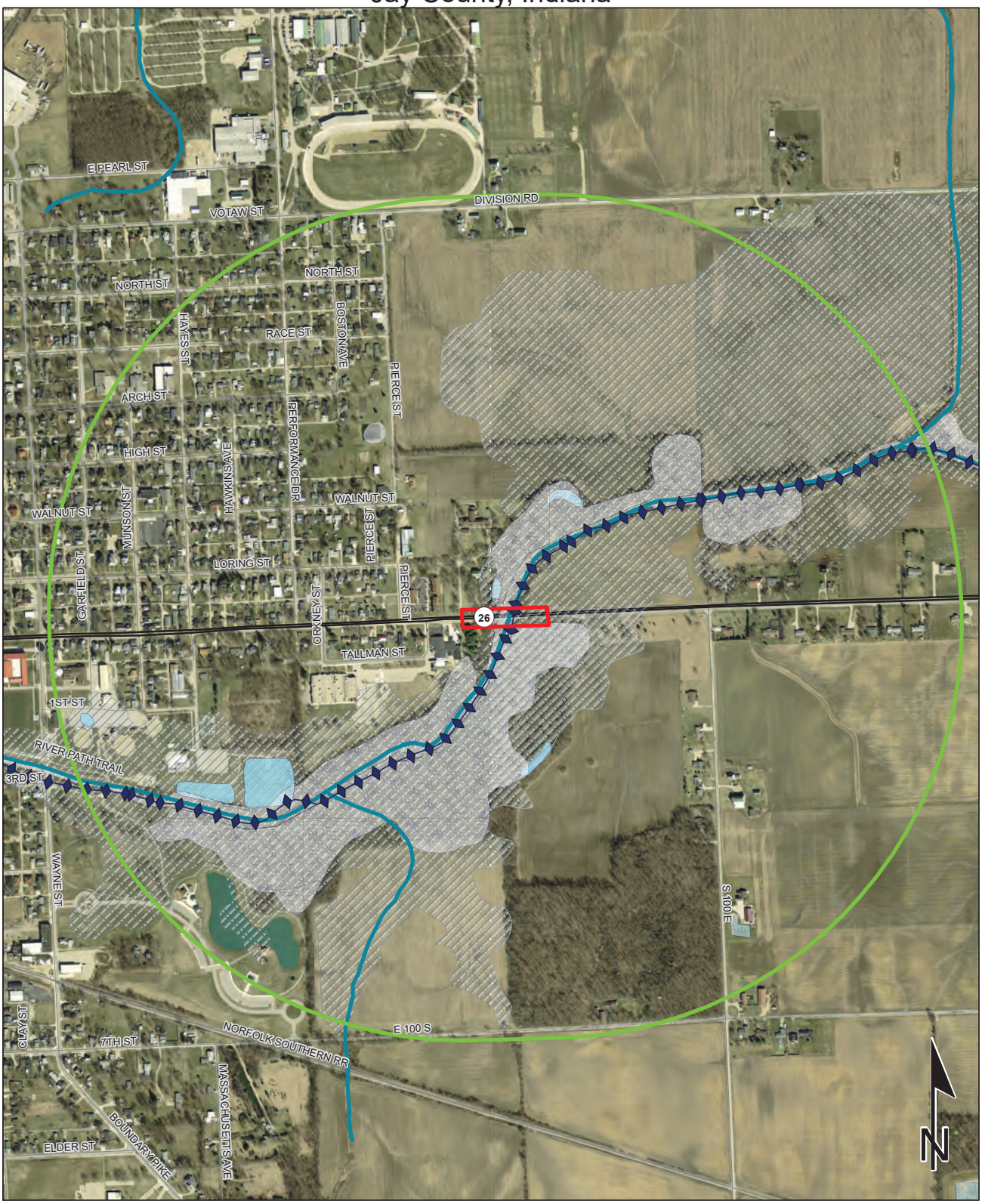
0.1 0.05 0 0.1 Miles

Sources:
Non Orthophotography Data - Obtained from the State of Indiana Geographical Information Office Library
Orthophotography - Obtained from Indiana Map Framework Data (www.indianamap.org)
Map Projection: UTM Zone 16 N **Map Datum:** NAD83

This map is intended to serve as an aid in graphic representation only. This information is not warranted for accuracy or other purposes.

- Religious Facility
- Airport
- Cemeteries
- Hospital
- School
- Recreation Facility
- Pipeline
- Railroad
- Trails
- Managed Lands
- County Boundary
- Project Area
- Half Mile Radius
- Toll
- Interstate
- State Route
- US Route
- Local Road

Red Flag Investigation - Water Resources
SR 26 over Salamonie River, 0.78 miles East of US 27
Des. No. 1600828 , Bridge Project
Jay County, Indiana



0.1 0.05 0 0.1 Miles

Sources:
Non Orthophotography Data - Obtained from the State of Indiana Geographical Information Office Library
Orthophotography - Obtained from Indiana Map Framework Data (www.indianamap.org)
Map Projection: UTM Zone 16 N **Map Datum:** NAD83

This map is intended to serve as an aid in graphic representation only. This information is not warranted for accuracy or other purposes.

- NWI - Point
- Karst Spring
- NWI- Line
- Impaired_Stream_Lake
- NPS NRI listed
- River
- Canal Structure - Historic
- Canal Route - Historic
- Wetlands
- Lake
- Floodplain - DFIRM
- Cave Entrance Density
- Sinkhole Area
- Sinking-Stream Basin
- County Boundary
- Project Area
- Half Mile Radius
- Toll
- Interstate
- State Route
- US Route
- Local Road

Red Flag Investigation - Urbanized Area Boundary
SR 26 over Salamonie River, 0.78 miles East of US 27
Des. No. 1600828 , Bridge Project
Jay County, Indiana

0.15 0.07 0 0.15 Miles

Sources:
Non Orthophotography Data - Obtained from the State of Indiana Geographical Information Office Library
Orthophotography - Obtained from Indiana Map Framework Data (www.indianamap.org)
Map Projection: UTM Zone 16 N **Map Datum:** NAD83

This map is intended to serve as an aid in graphic representation only. This information is not warranted for accuracy or other purposes.

UAB
County Boundary
Project Area
Half Mile Radius
Toll
Interstate
State Route
US Route
Local Road

Red Flag Investigation - Hazardous Material Concerns
SR 26 over Salamonie River, 0.78 miles East of US 27
Des. No. 1600828 , Bridge Project
Jay County, Indiana

- Brownfield
- RCRA Corrective Action Sites
- Confined Feeding Operation
- Notice_Of_Contamination
- Construction/Demolition Site
- Infectious/Medical Waste Site
- Leaking Underground Storage Tank
- Manufactured Gas Plant
- NPDES Facilites
- NPDES Pipe Locations
- Open Dump Waste Site
- RCRA Generator/TSD
- Restricted Waste Site
- Septage Waste Site
- Solid Waste Landfill
- State Cleanup Site
- Superfund
- Tire Waste Site
- Underground Storage Tank
- Voluntary Remediation Program
- Waste Transfer Station
- Institutional Controls
- County Boundary
- Project Area
- Half Mile Radius
- Toll
- Interstate
- State Route
- US Route
- Local Road

0.1 0.05 0 0.1 Miles

This map is intended to serve as an aid in graphic representation only. This information is not warranted for accuracy or other purposes.

Sources:
Non Orthophotography
Data - Obtained from the State of Indiana Geographical Information Office Library
Orthophotography - Obtained from Indiana Map Framework Data (www.indianamap.org)
Map Projection: UTM Zone 16 N **Map Datum:** NAD83

Indiana County Endangered, Threatened and Rare Species List

County: Jay

Species Name	Common Name	FED	STATE	GRANK	SRANK
Mollusk: Bivalvia (Mussels)					
Epioblasma triquetra	Snuffbox	LE	SE	G3	S1
Pleurobema clava	Clubshell	LE	SE	G1G2	S1
Ptychobranchus fasciolaris	Kidneyshell		SSC	G4G5	S2
Toxolasma lividus	Purple Lilliput	C	SSC	G3Q	S2
Insect: Odonata (Dragonflies & Damselflies)					
Enallagma divagans	Turquoise Bluet		SR	G5	S3
Macromia wabashensis	Wabash River Cruiser		SE	G1G3Q	S1
Reptile					
Clonophis kirtlandii	Kirtland's Snake		SE	G2	S2
Thamnophis proximus proximus	Western Ribbon Snake		SSC	G5T5	S3
Bird					
Botaurus lentiginosus	American Bittern		SE	G5	S2B
Circus hudsonius	Northern Harrier		SE	G5	S2
Cistothorus platensis	Sedge Wren		SE	G5	S3B
Haliaeetus leucocephalus	Bald Eagle		SSC	G5	S2
Ixobrychus exilis	Least Bittern		SE	G5	S3B
Nycticorax nycticorax	Black-crowned Night-heron		SE	G5	S1B
Tyto alba	Barn Owl		SE	G5	S2
Mammal					
Mustela nivalis	Least Weasel		SSC	G5	S2?
Myotis sodalis	Indiana Bat	LE	SE	G2	S1
Vascular Plant					
Carex timida	Timid Sedge		SE	G2G4	S1
Dactylorhiza viridis	Long-bract Green Orchis		SE	G5	S1
Panax quinquefolius	American Ginseng		WL	G3G4	S3
Viola pedatifida	Prairie Violet		ST	G5	S2
High Quality Natural Community					
Forest - flatwoods central till plain	Central Till Plain Flatwoods		SG	G3	S2
Forest - floodplain mesic	Mesic Floodplain Forest		SG	G3?	S1
Forest - upland dry-mesic Central Till Plain	Central Till Plain Dry-mesic Upland Forest		SG	GNR	S2
Prairie - dry-mesic	Dry-mesic Prairie		SG	G3	S2
Prairie - mesic	Mesic Prairie		SG	G2	S2
Prairie - wet	Wet Prairie		SG	G3	S1
Wetland - marsh	Marsh		SG	GU	S4

Indiana Natural Heritage Data Center
Division of Nature Preserves
Indiana Department of Natural Resources
This data is not the result of comprehensive county surveys.

Fed: LE = Endangered; LT = Threatened; C = candidate; PDL = proposed for delisting

State: SE = state endangered; ST = state threatened; SR = state rare; SSC = state species of special concern; SX = state extirpated; SG = state significant; WL = watch list

GRANK: Global Heritage Rank: G1 = critically imperiled globally; G2 = imperiled globally; G3 = rare or uncommon globally; G4 = widespread and abundant globally but with long term concerns; G5 = widespread and abundant globally; G? = unranked; GX = extinct; Q = uncertain rank; T = taxonomic subunit rank

SRANK: State Heritage Rank: S1 = critically imperiled in state; S2 = imperiled in state; S3 = rare or uncommon in state; G4 = widespread and abundant in state but with long term concern; SG = state significant; SH = historical in state; SX = state extirpated; B = breeding status; S? = unranked; SNR = unranked; SNA = nonbreeding status unranked

Subject: RE: Des. No. 1600828 S.R. 26 over Salamonie River
Date: Wednesday, April 7, 2021 at 2:47:03 PM Eastern Daylight Time
From: Foheybreting, Nicole K
To: Erin Mulryan
Attachments: image023.png, image024.png, image025.png, image026.png, image027.png, image028.png, image029.png, image030.png, image031.png, image032.png, image033.png, image034.png, image035.png, image036.png, image037.png, image038.png, image039.png, image040.png, image041.png, image042.png, image043.png, image044.png, image045.png, image046.png, image047.png, image048.png, image049.png, image050.png, image051.png, image052.png, image053.png, image054.png, image055.png, image056.png, image057.png, image058.png,

Greetings Erin –

Thank you for the update and the clarification on the trail segment that is mapped adjacent to the project area on GIS. It sounds as though the mapped trail segment is not a concern (nor is it adjacent) to the project area and, since coordination already occurred in 2020, it does not sound as though an RFI Addendum is needed. A note in the CE clarifying the presence of the trail sounds appropriate.

I hope this helps. Please let me know if I can be of any additional assistance.
Thank you,
Nicole

M) Specialist

The Site Assessment and Management (SAM) Manual can be found at https://www.in.gov/indot/4170.htm

Be sure to refer to the updated information in the SAM Manual for document preparation and submission.

From: Erin Mulryan <emulryan@sjcainc.com>
Sent: Wednesday, April 07, 2021 2:25 PM
To: Foheybreting, Nicole K <NFoheyBreting@indot.IN.gov>
Subject: Re: Des. No. 1600828 S.R. 26 over Salamonie River

Appendix F
Water Resources

Juliana Clayton
Approved 7.9.2020

WATERS DETERMINATION REPORT

S.R. 26 OVER SALAMONIE RIVER
BRIDGE REPLACEMENT
DES. NO. 1600828
WAYNE TOWNSHIP, JAY COUNTY, INDIANA

Prepared for:
USI Consultants, Inc.

April 2, 2020

Prepared by:

Metric Environmental, LLC

Complex Environment. Creative Solutions.
6971 Hillsdale Court
Indianapolis, IN 46256
Telephone: 317.207.4286
www.metricenv.com

WATERS OF THE U.S. DETERMINATION REPORT
S.R. 26 over Salamonie River
Bridge Replacement
Wayne Township, Jay County, Indiana
Des. No. 1600828
Prepared By: Cory Shumate, Metric Environmental, LLC
April 2, 2020

Date of Waters Field Investigation: August 28, 2019

Location:
Section 21; Township 23 North; Range 14 East
Portland, IN 7.5-minute USGS Topographic Quadrangles (**Exhibit 2**)
Wayne Township, Jay County, Indiana
12-Digit HUC Watershed: 051201020103
Latitude: 40.43258 Longitude: -84.96348

FEMA Flood Insurance Rate Map (FIRM):
One mapped floodplain is located within the project study limits (PSL). This floodplain was associated with Salamonie River and identified as Zone AE, an area subject to inundation by the 1 percent annual chance of flood. The FIRM map for this area is provided as **Exhibit 3**.

USGS National Hydrography Dataset (NHD) Information:
One mapped NHD flowline is located within the PSL, listed in the table below. The NHD Flowline map is provided in **Exhibit 3**.

Corresponding Feature	NDH Flowline Classification	Photo Nos.	USGS Blue line
Salamonie River	Artificial Path	25-38	Yes

National Wetlands Inventory (NWI) Information:
Five mapped NWI polygons are located within the PSL, listed in the table below. The NWI map is provided as **Exhibit 4**.

Symbol	Wetland Type	Location within PSL	Corresponding Feature
R2UBH	Riverine, Lower Perennial, Unconsolidated Bottom, Permanently Flooded	Central	Salamonie River
R2UBHx	Riverine, Lower Perennial, Unconsolidated Bottom, Permanently Flooded, Excavated	Central	

Symbol	Wetland Type	Location within PSL	Corresponding Feature
PFO1A	Palustrine, Forested, Broad-leaved Deciduous, Temporarily Flooded	Northcentral	Open Water 1
PFO1A	Palustrine, Forested, Broad-leaved Deciduous, Temporarily Flooded	Southcentral	None
PFO1A	Palustrine, Forested, Broad-leaved Deciduous, Temporarily Flooded	Eastern	Wetland A

Karst Feature Information:
No mapped karst features were found within 0.5 mi. of the PSL during the desktop review.

Soils:
According to the Natural Resources Conservation Service (NRCS) Soil Survey Geographic (SSURGO) Database for Jay County, Indiana, the PSL contained four mapped soil units, listed in the table below. The NRCS Soil Survey map is provided as **Exhibit 4**.

Symbol	Map unit name	Hydric Rating (%)
BlA	Blount-Glynwood, thin solum complex, 0 to 3 percent slopes	Hydric (5)
Ee	Eel clay loam, frequently flooded	Hydric (5)
GlgB2	Glynwood silt loam, ground moraine, 1 to 4 percent slopes, eroded	Hydric (3)
Pm	Pewamo silty clay, 0 to 2 percent slopes	Hydric (91)

Attached Documents:
Maps of the project area (**Exhibits 1-5**)
Photo Location Map (**Exhibit 6**)
Site Photographs
Wetland Determination Data Form(s)
Preliminary Jurisdictional Determination Form

Project Description:
The proposed project (Des. No. 1600828) includes replacement of the existing bridge (Bridge No. 026-38-03430 A/NIBI No. 007040), which carries S.R. 26 over Salamonie River in Wayne Township, Jay County, Indiana. The existing structure is a 150 ft. long span with a 28 ft. clear roadway width curb-to-curb. The proposed improvements include installation of a two-lane bridge that is a 3-span structure with a 30-ft. clear roadway width, subject to change upon further project design.

Field Reconnaissance:
The wetland determination field visit was conducted on October 28, 2019 by Zachary Root and Cory Shumate of Metric Environmental, LLC. The project study area received over an inch of rain between August 26, 2019 and August 27, 2019. The PSL consists of the area that has the potential to be impacted, based on the provided design scenario. This area was evaluated for the presence of wetlands and Waters of the United States. This investigation was conducted in accordance with the *1987 U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual* and the *August 2010 Midwest Regional Supplement (version 2.0) Manual.*

A Location Map showing the project location is provided as **Exhibit 1**. The proposed project is located in central Jay County, Indiana, on S.R. 26, approximately 0.75 mi. east of the intersection of S.R. 26 and U.S. 27. The PSL extended approximately 1,700 ft. along S.R. 26, approximately 125 ft. north of S.R. 26 centerline, and approximately 65 ft. south of S.R. 26 centerline. An aerial map of sampling points and water features is provided as **Exhibit 5**. A photo location map is provided as **Exhibit 6** and site photographs are attached.

The site was investigated for evidence of hydrophytic vegetation, hydric soil, and wetland hydrology to determine if the project impacts wetlands and other Waters of U.S. The sampling point (SP) locations were chosen in possible wetland areas within the PSL. The upland areas consisted of deciduous forest, residential lawn, and agricultural crop field. Upland areas where sampling points were not taken, were investigated and determined to be upland due to upward sloping topography and/or presence of dominant upland vegetation. Eight sampling points were taken, recorded on the USACE Wetland Determination Data Forms and shown on **Exhibit 6.** The sampling points provided the following information:

Sampling Plot Data Summary Table

Plot #	Photo #s	Lat/Long	Hydrophytic Vegetation	Hydric Soils	Wetland Hydrology	Within Wetland
SP-A1	1-3	40.4325 -84.96183	Yes	Yes	Yes	Yes, Wetland A
SP-A2	4-6	40.43236 -84.96347	Yes	No	Yes	No, Wetland A Upland
SP-B1	7-9	40.4326 -84.96485	Yes	Yes	Yes	Yes, Wetland B
SP-B2	10-12	40.43265 -84.96484	No	No	No	No, Wetland B Upland
SP-1	13-15	40.43266 -84.96338	Yes	No	Yes	No
SP-2	16-18	40.43249 -84.96373	Yes	No	Yes	No
SP-3	19-21	40.43264 -84.9637	Yes	No	Yes	No

Plot #	Photo #s	Lat/Long	Hydrophytic Vegetation	Hydric Soils	Wetland Hydrology	Within Wetland
SP-4	22-24	40.43268 -84.96255	Yes	No	Yes	No

Wetlands:

Two wetlands were observed within the PSL. Descriptions of the wetlands and corresponding sampling points are provided below.

Wetland Summary Table

Wetland Name	Photo #s	Lat/Long	Cowardin Class	Total Area	Quality	Likely Water of the U.S.
				acres		
Wetland A	2, 3, 63, 66, 67	40.4325 -84.96178	PFO1A	0.128	Average	No
Wetland B	8, 9, 11, 12	40.4326 -84.96487	PSS1A	0.005	Poor	No

Wetland A (0.128 ac.) – PFO1A

Wetland A was classified as a Palustrine, Forested, Broad-Leaved Deciduous, Temporarily Flooded (PFO1A) wetland. This wetland is located in a drainage ditch within the floodplain of Salamonie River, south of S.R. 26 and east of Salamonie River. Wetland A likely receives stormwater drainage on a consistent basis during rain events. Wetland A does not directly abut a jurisdictional stream and should therefore be considered a Waters of the State. The boundaries of Wetland A were delineated by the lack of wetland vegetation and/or increased elevation. The east and west areas of Wetland A were separated by a 16-in. corrugated metal pipe (CMP) culvert. These were determined to be one wetland due to proximity and topography indicating that both areas shared a hydrologic connection. Reed canary grass (*Phalaris arundinacea*, FACW) dominated the western area of Wetland A and a mixture of reed canary grass (*Phalaris arundinacea*, FACW) and spotted touch-me-not (*Impatiens capensis*, FACW) dominated the eastern area of Wetland A. Wetland A was associated with a mapped PFO1A NWI polygon and was formed within Ee, GlgB2, and BlA mapped soil units, which are listed as 5 percent, 3 percent, and 5 percent hydric, respectively. Wetland A is adjacent to road and forest and likely receives run-off from both of these sources. While the wetland was forested and bordered a deciduous forest to the south, it was also dominated by reed canary grass (*Phalaris arundinacea*, FACW), an invasive plant species, in the herb stratum. These factors contribute to the conclusion that the wetland can support an average amount of wildlife or aquatic habitat, and therefore should be considered to be of average quality.

Sampling Point A1 (SP-A1) – Wetland A

SP-A1 was located at the toe of a hillslope in a drainage ditch south of S.R. 26 and east of Salamonie River. The dominant vegetation at this sampling point was black walnut (*Juglans nigra*, FACU) in the tree stratum and reed canary grass (*Phalaris arundinacea*, FACW) in the herb stratum. This met the hydrophytic vegetation indicator of prevalence index (2.33). To a depth of 20 in., the soils in the test pit were silty clay loam. From 0 to 11 in., the soil exhibited a matrix color of 10YR 3/1 (85 percent) with 5YR 3/4 (15 percent) prominent redox concentrations along pore linings. From 11 to 20 in., the soil exhibited a matrix color of 10YR 3/1 (80 percent) with 10YR 5/8 (15 percent) prominent redox concentrations in the matrix and 5YR 3/4 (5 percent) prominent redox concentrations along pore linings. This met the hydric soil indicator of redox dark surface (F6). Indicators of wetland hydrology observed during the field reconnaissance included oxidized rhizospheres on living roots (C3), drainage patterns (B10), and geomorphic position (D2) due to the sampling point's location at the toe of a hillslope within a drainage ditch. Since all three required wetland criteria were met, this area qualified as a wetland.

Sampling Point A2 (SP-A2) – Wetland A Upland

SP-A2 was located on a stream terrace of Salamonie River, west of Wetland A. The dominant vegetation at this sampling point was common hackberry (*Celtis occidentalis*, FAC), ash-leaf maple (*Acer negundo*, FAC), and white mulberry (*Morus alba*, FAC) in the tree stratum and tall goldenrod (*Solidago gigantea*, FACW) and hooded blue violet (*Viola sororia*, FAC) in the herb stratum. This met the hydrophytic vegetation indicators of dominance test (100 percent) and prevalence index (2.60). To a depth of 20 in., the soils in the test pit were a silty clay loam. From 0 to 20 in., the soil exhibited a matrix color of 10YR 4/2 (100 percent). This did not meet any of the hydric soil indicators. Indicators of wetland hydrology observed included drainage patterns (B10), geomorphic position (D2) due to the sampling point's location on a stream terrace, and FAC-neutral test (D5). Since only two of the three required wetland criteria were met, this area did not qualify as a wetland.

Wetland B (0.005 ac.) – PSS1A

Wetland B was classified as a Palustrine, Scrub-shrub, Broad-Leaved Deciduous, Temporarily Flooded (PSS1A) wetland. This wetland is located in a drainage ditch north of S.R. 26 and west of Salamonie River. Wetland B likely receives stormwater drainage on a consistent basis during rain events. Wetland B does not directly abut a jurisdictional stream and should therefore be considered a Waters of the State. The boundaries of Wetland B were delineated by the lack of wetland vegetation and/or increased elevation. Wetland B was not associated with a mapped NWI polygon and was formed within GlgB2 mapped soil unit, which is listed as 3-percent hydric. Wetland B is adjacent to road and residential property and likely receives run-off from both of these sources. The wetland also exhibited poor plant species

diversity. These factors contribute to the conclusion that the wetland can support a poor amount of wildlife or aquatic habitat, and therefore should be considered to be of poor quality.

Sampling Point B1 (SP-B1) – Wetland B

SP-B1 was located in a drainage ditch north of S.R. 26 and west of Salamonie River. The dominant vegetation at this sampling point was green ash (*Fraxinus pennsylvanica*, FACW) and black walnut (*Juglans nigra*, FACU) in the sapling/shrub stratum and broad-leaf cattail (*Typha latifolia*, OBL) and common boneset (*Eupatorium perfoliatum*, OBL) in the herb stratum. This met the hydrophytic vegetation indicators of dominance test (75 percent) and prevalence index (1.88). To a depth of 20 in., the soils in the test pit were silty clay loam. From 0 to 9 in., the soil exhibited a matrix color of 10YR 4/2 (75 percent) with 10YR 5/3 (15 percent) faint redox concentrations and 7.5YR 5/8 (10 percent) prominent redox concentrations in the matrix. From 9 to 20 in., the soil exhibited a matrix color of 10YR 4/2 (70 percent) with 10YR 5/3 (30 percent) faint redox concentrations in the matrix. This met the hydric soil indicator of depleted matrix (F3). Indicators of wetland hydrology observed included saturation (A3), geomorphic position (D2) due to the sampling point's location in a drainage ditch, and FAC-neutral test (D5). Since all three required wetland criteria were met, this area qualifies as a wetland.

Sampling Point B2 (SP-B2) – Wetland B Upland

SP-B2 was located at the top of a hillslope north of Wetland B. The dominant vegetation at this sampling point was red fescue (*Festuca rubra*, FACU) and red clover (*Trifolium pratense*, FACU) in the herb stratum. This did not meet any of the hydrophytic vegetation indicators. To a depth of 20 in., the soil in the test pit was a silty clay loam. From 0 to 20 in., the soil exhibited mixed matrix colors of 10YR 5/1 (50 percent) and 10YR 5/2 (50 percent). This did not meet any of the hydric soil indicators. No primary or secondary indicators of wetland hydrology were observed. Since none of the three required wetland criteria were met, this area did not qualify as a wetland.

Additional Sampling Points:

Additional sampling points were taken in areas where wetlands were suspected but did not meet the three wetland criteria. Descriptions of these sampling points are included below.

Sampling Point 1 (SP-1)

SP-1 was located on a stream terrace north of S.R. 26 and east of Salamonie River. The dominant vegetation at this sampling point included Washington hawthorn (*Crataegus phaenopyrum*, FAC) and ash-leaf maple (*Acer negundo*, FAC) in the tree stratum and reed canary grass (*Phalaris arundinacea*, FACW) and great ragweed *(Ambrosia trifida*, FAC) and in the herb stratum. This met the hydrophytic vegetation indicators of dominance test (100 percent) and prevalence index (2.43). To a depth of 20 in., the soil in the test pit was a silty clay loam. From 0 to 20 in., the soil exhibited a matrix color of 10YR 4/2 (100 percent). This did not meet any of the hydric soil indicators. Indicators of wetland hydrology observed included geomorphic

position (D2) due to the sampling point's location on a stream terrace and FAC-neutral test (D5). Since only two of the three required wetland criteria were met, this area did not qualify as a wetland.

Sampling Point 2 (SP-2)

SP-2 was located on a stream terrace south of S.R. 26 and west of Salamonie River. The dominant vegetation at this sampling point was reed canary grass (*Phalaris arundinacea*, FACW) and great ragweed (*Ambrosia trifida,* FAC) in the herb stratum. This met the hydrophytic vegetation indicators of dominance test (100 percent) and prevalence index (2.20). To a depth of 20 in., the soil in the test pit was a silty clay loam. From 0 to 20 in., the soil exhibited a matrix color of 10YR 4/2 (100 percent). This did not meet any of the hydric soil indicators. Indicators of wetland hydrology observed included geomorphic position (D2) due to the sampling point's location on a stream terrace, and FAC-neutral test (D5). Since only two of the three required wetland criteria were met, this area did not qualify as a wetland.

Sampling Point 3 (SP-3)

SP-3 was located on a stream terrace south of S.R. 26 and west of Salamonie River. The dominant vegetation at this sampling point was reed canary grass (*Phalaris arundinacea*, FACW) in the herb stratum. This met the hydrophytic vegetation indicators of rapid test for hydrophytic vegetation, dominance test (100 percent), and prevalence index (2.00). To a depth of 20 in., the soil in the test pit was a silty clay loam. From 0 to 18 in., the soil exhibited a matrix color of 10YR 4/2 (100 percent). From 18 to 20 in., the soil exhibited mixed matrix colors of 10YR 3/4 (45 percent) and 10YR 4/1 (45 percent) with 10YR 6/4 (10 percent) distinct redox concentrations in the matrix. This did not meet any of the hydric soil indicators. Indicators of wetland hydrology observed included drainage patterns (B10), geomorphic position (D2) due to the sampling point's location on a stream terrace, and FAC-neutral test (D5). Since only two of the three required wetland criteria were met, this area did not qualify as a wetland.

Sampling Point 4 (SP-4)

SP-4 was located at the toe of a hillslope within RSD 5, north of S.R. 26, and east of Salamonie River. The dominant vegetation at this sampling point was reed canary grass (*Phalaris arundinacea*, FACW) in the herb stratum. This met the hydrophytic vegetation indicators of rapid test for hydrophytic vegetation, dominance test (100 percent), and prevalence index (2.77). To a depth of 20 in., the soils in the test pit were silty clay loam. From 0 to 11 in., the soil exhibited a matrix color of 10YR 3/2 (100 percent). From 11 to 20 in., the soil exhibited mixed matrix colors of 10YR 3/2 (50 percent) and 10YR 4/2 (50 percent). This did not meet any of the hydric soil indicators. Indicators of wetland hydrology observed included geomorphic position (D2) due to the sampling point's location at the toe of a hillslope within a roadside ditch and FAC-neutral test (D5). Since only two of the three required wetland criteria were met, this area did not qualify as a wetland.

Streams:
One stream, Salamonie River, was observed within the PSL during the field reconnaissance. A description of the stream is provided below.

Stream Summary Table

Stream Name	Photos	Lat/Long	OHWM Width	OHWM Depth	USGS Blue-line	Riffles Pools	Quality	Likely Water of the U.S.	Dominant Substrate	Potential Stream Impact
			ft.	in.						ft.
Salamonie River	25-38	40.43258 -84.96353	36.3	10.5	Yes (Perennial)	Riffles & Pools	Poor	Yes	Sand & Silt	200

Salamonie River (200 LFT)
Salamonie River flows from northeast to southwest and is approximately 200 linear feet (LFT) (0.167 ac.) within the PSL. Salamonie River is a tributary to the Wabash River. Therefore, Salamonie River should be considered a jurisdictional Water of the U.S. Salamonie River was associated with a solid blue line on the USGS topographic map, indicating it is perennial. Salamonie River was classified as both R2UBH and R2UBHx by the NWI. Salamonie River was indicated to be an "Artificial Path" by the NHD. However, Salamonie River did not appear to have undergone any recent relocation or any other work in the past based on the USGS topographic map (dated 1996) and based on aerial imagery dating back to 1998. Therefore, based on USGS topographic maps, aerial imagery, and field observations, Salamonie River should be considered a perennial stream. The Ordinary High-Water Mark (OHWM) was 36.3 ft. wide and 10.5 in. deep within the PSL. Measurements of the OHWM were collected outside the influence of the existing structure. The dominant stream substrates were sand and silt. Pools were present and the only functional riffles observed were within the influence of the existing structure. The stream exhibited sparse amounts of instream cover which included undercut banks, overhanging vegetation, and logs or woody debris. No sinuosity was observed and water velocity was slow. The floodplain of Salamonie River consisted of forest. No aquatic organisms were observed. According to USGS *Indiana StreamStats*, the drainage area upstream of Salamonie River at the PSL is 45.873 square miles. Qualities of the stream listed above contribute to this stream being classified as poor quality.

Open Water:
One open water feature was observed within the PLS during the field reconnaissance and is noted on **Exhibit 5**. Open Water 1 was located in the northcentral portion of the PSL and 0.037 ac. was contained within the PSL.

Roadside Ditches and Drainage Features:
Six roadside ditches (RSD) and four drainage features (DF) were identified within the PSL. These features aided in stormwater and/or roadside drainage. No OHWM was observed in these features, so they are likely non-jurisdictional.

Roadside Ditches and Drainage Features Summary Table

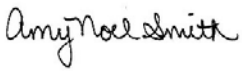
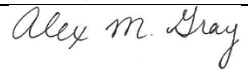
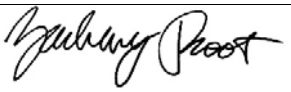
Name	Photo #s	Lat/Long	Linear Length (ft)	Location	Description
RSD 1	12, 44	40.43261 -84.96527	177	Northwest Quadrant	Vegetated Swale
RSD 2	52	40.43266 -84.96377	64	Northwest Quadrant	Vegetated Swale, Concrete Ditch
RSD 3	49, 50	40.43246 -84.96426	224	Southwest Quadrant	Vegetated Swale
RSD 4	68, 69	40.43245 -84.963	73	Southeast Quadrant	Vegetated Swale
RSD 5	23, 24, 58, 60	40.4327 -84.96166	698	Northeast Quadrant	Vegetated Swale
RSD 6	61, 62	40.43252 -84.96075	190	Southeast Quadrant	Vegetated Swale
DF 1	44, 45	40.43265 -84.96526	35	Northwest Quadrant	Concrete Ditch
DF 2	12, 46	40.43273 -84.96493	83	Northwest Quadrant	Gravel Ditch
DF 3	53, 54, 56	40.43269 -84.96324	136	Northwest Quadrant	Vegetated/Silt Swale
DF 4	70, 71, 73	40.43245 -84.96334	124	Southeast Quadrant	Vegetated/Silt Swale

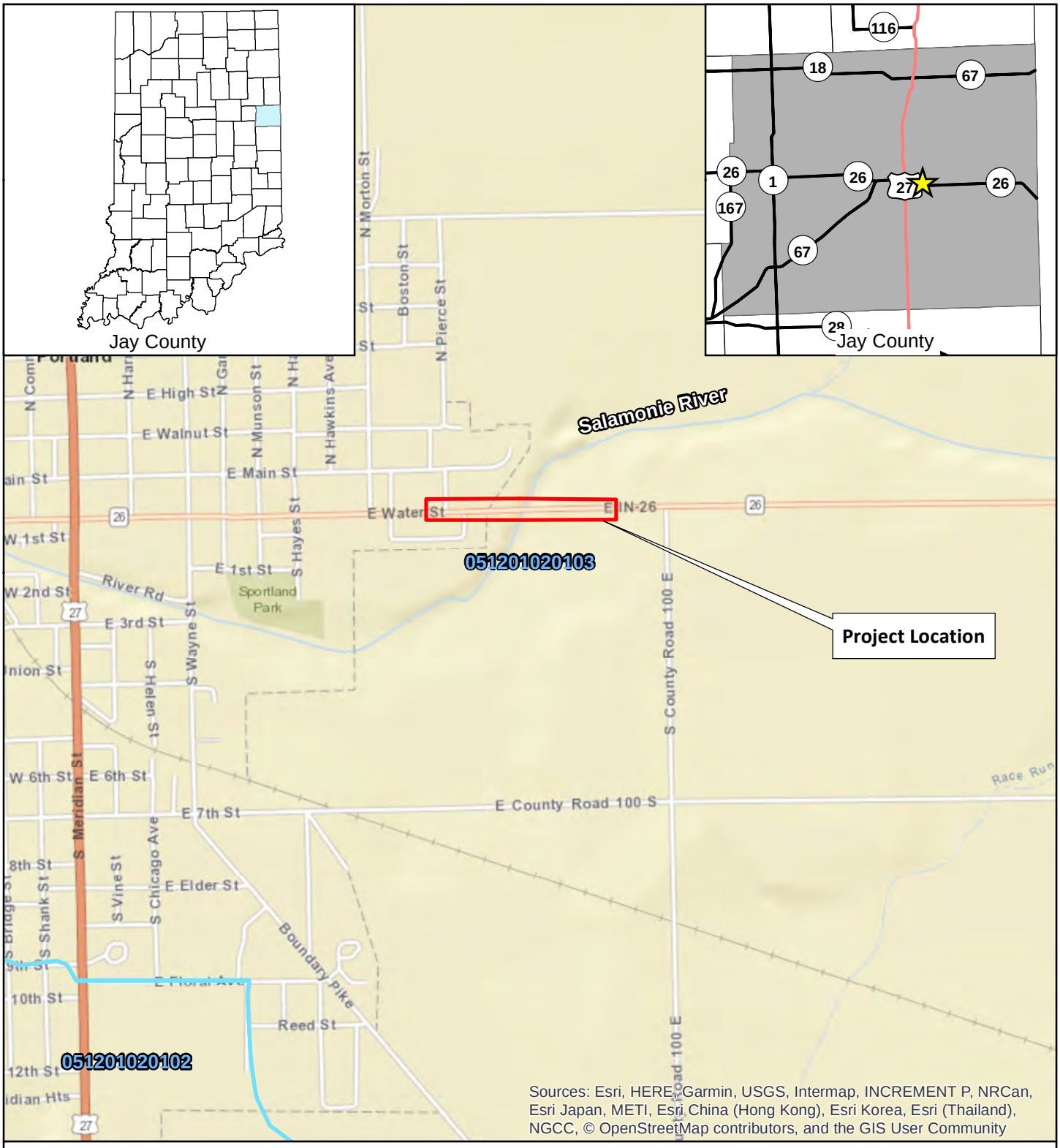
Culverts and Drains:
Four culverts were identified within the PSL. The culverts were composed of either concrete or corrugated metal pipe (CMP). These culverts did not carry jurisdictional waters due to a lack of an OHWM, bed and bank, and lack of a significant nexus to any jurisdictional Waters of the U.S. Locations of these culverts are shown on **Exhibits 5** and **6** and attached photosheet.

Conclusion:
Two wetlands, one PFO1A and the other PSS1A, totaling 0.133 ac., were identified within the project study limits and are likely Waters of the State. One stream, Salamonie River, totaling 200 LFT, was identified within the project study limits. One open water feature, totaling 0.037 acre within the project study limits, was also identified. These waterways are likely Waters of the U.S. Every effort should be taken

to avoid and minimize impacts to the waterway and wetlands. If impacts are necessary, then mitigation might be required. The INDOT Environmental Services Division should be contacted immediately if impacts will occur. The final determination of jurisdictional waters is ultimately made by the U.S. Army Corps of Engineers. This report is our best judgment based on the guidelines set forth by the Corps.

Acknowledgements:
This waters determination has been prepared based on the best available information, interpreted in light of the investigator's training, experience and professional judgement in conformance with the 1987 Corps of engineers Wetlands Delineation Manual, the appropriate regional supplement, the USACE Jurisdictional Determination Form Instructional Guidebook, and other appropriate agency guidelines.

Metric Environmental Staff	Position	Contributing Effort	Signature/Date
Amy Noel Smith	Natural Resources Project Manager II	Project Manager, Field Data Collection	 4/2/2020
Alex Gray	Natural Resources Project Manager I	QAQC	 4/2/2020
Cory Shumate	Environmental Scientist 2	Field Data Collection, Report Preparation	 4/2/2020
Zachary Root	Environmental Scientist 2	Field Data Collection	 4/2/2020



Project Study Limits (PSL) 12-Digit HUC Watershed

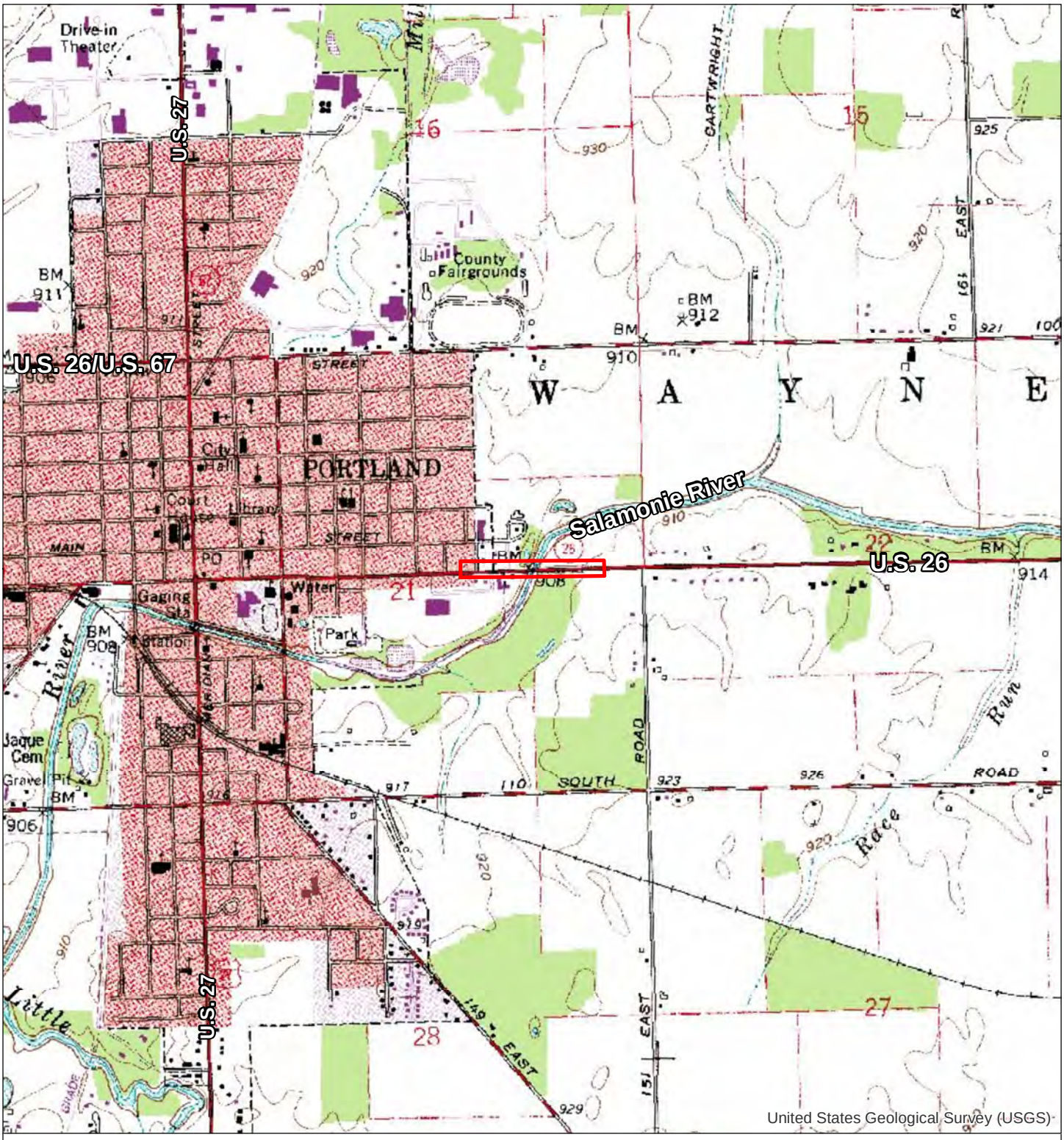
Exhibit 1 - Location Map
S.R. 26 over Salamonie River
Bridge Replacememt
Wayne Township, Jay County, IN
Des. No. 1600828
Metric Project No. 17-0082
Map Date: 8/26/2019
Map Author: Cory Shumate

All locations approximate
2018 Basemap
Latitude: 40.43258 Longitude: -84.96348

N
Miles 0 0.125 0.25 0.5

METRIC ENVIRONMENTAL

Exh. 1



Project Study Limits (PSL)

Exhibit 2A - USGS Topographic Map - Small Scale
Portland, IN 7.5 minute Quadrangle
S.R. 26 over Salamonie River
Bridge Replacememt
Wayne Township, Jay County, IN
Des. No. 1600828
Metric Project No. 17-0082
Map Date: 8/5/2019
Map Author: Zachary Root

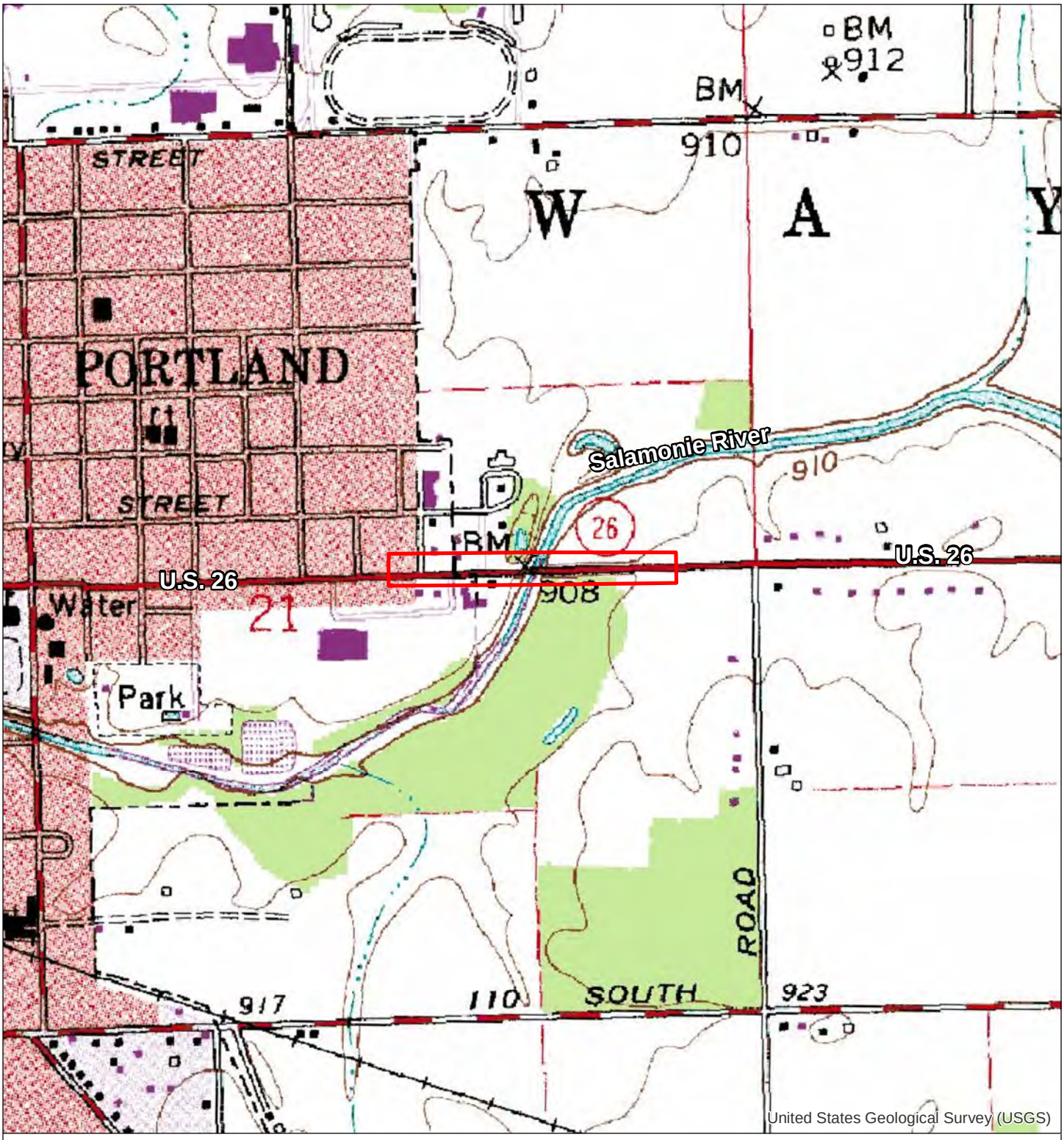
All locations approximate
Source: Indiana Spatial Data Portal (1996)

N

0 625 1,250 2,500
Feet

METRIC ENVIRONMENTAL

Exh. 2A



Project Study Limits (PSL)

Exhibit 2B - USGS Topographic Map - Large Scale
Portland, IN 7.5 minute Quadrangle
S.R. 26 over Salamonie River
Bridge Replacememt
Wayne Township, Jay County, IN
Des. No. 1600828
Metric Project No. 17-0082
Map Date: 8/5/2019
Map Author: Zachary Root

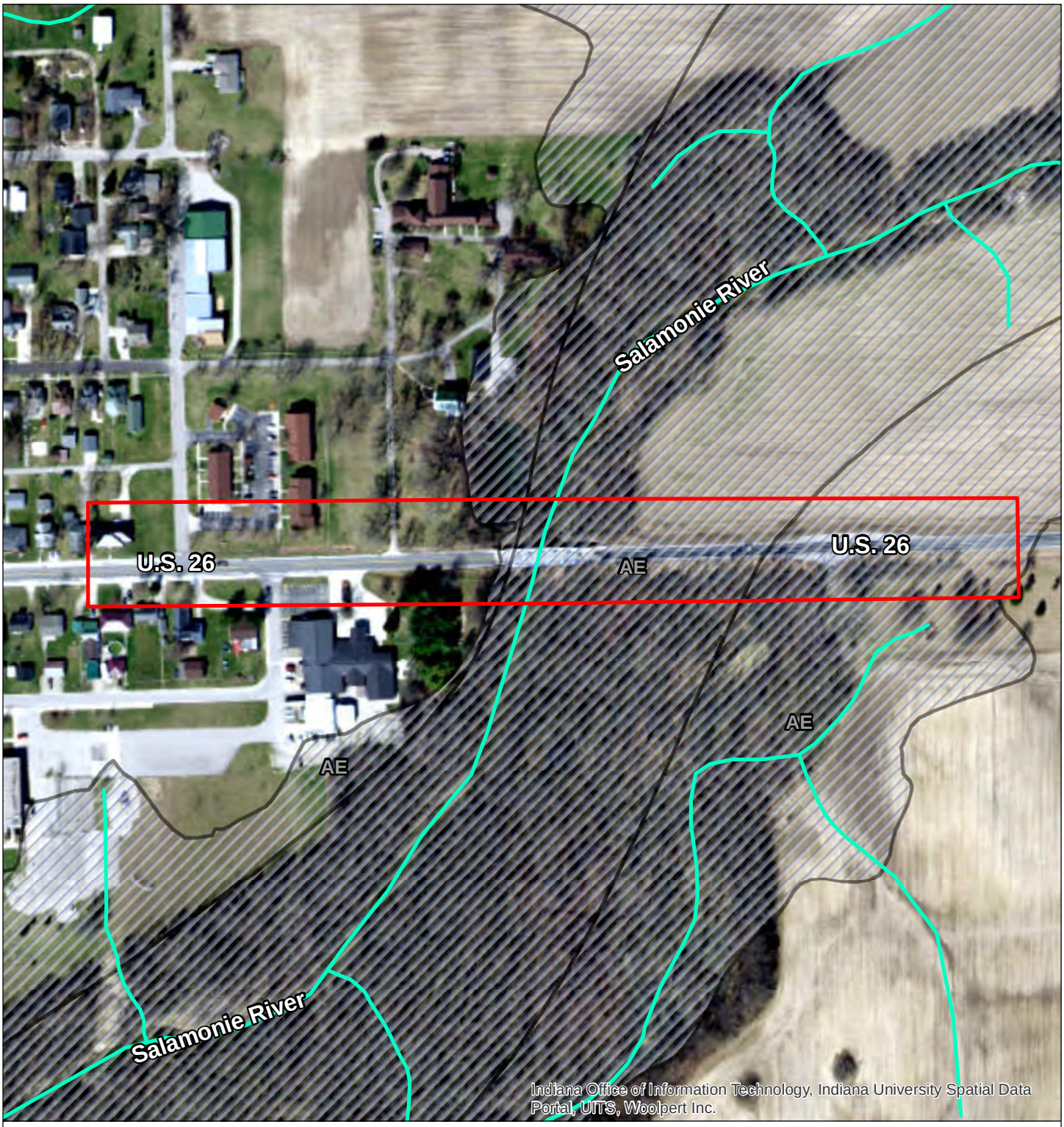
All locations approximate
Source: Indiana Spatial Data Portal (1996)

N

0 250 500 1,000
Feet

METRIC ENVIRONMENTAL

Exh. 2B



Project Study Limits (PSL)

NHD Flowline

Floodplain - Zone AE - 1% Chance Annual Flood

Exhibit 3 - NHD Flowline and FEMA Flood Insurance Rate Map (FIRM)
S.R. 26 over Salamonie River
Bridge Replacememt
Wayne Township, Jay County, IN
Des. No. 1600828
Metric Project No. 17-0082
Map Date: 8/26/2019
Map Author: Cory Shumate

All locations approximate

Source: Indiana Spatial Data Portal (2017)

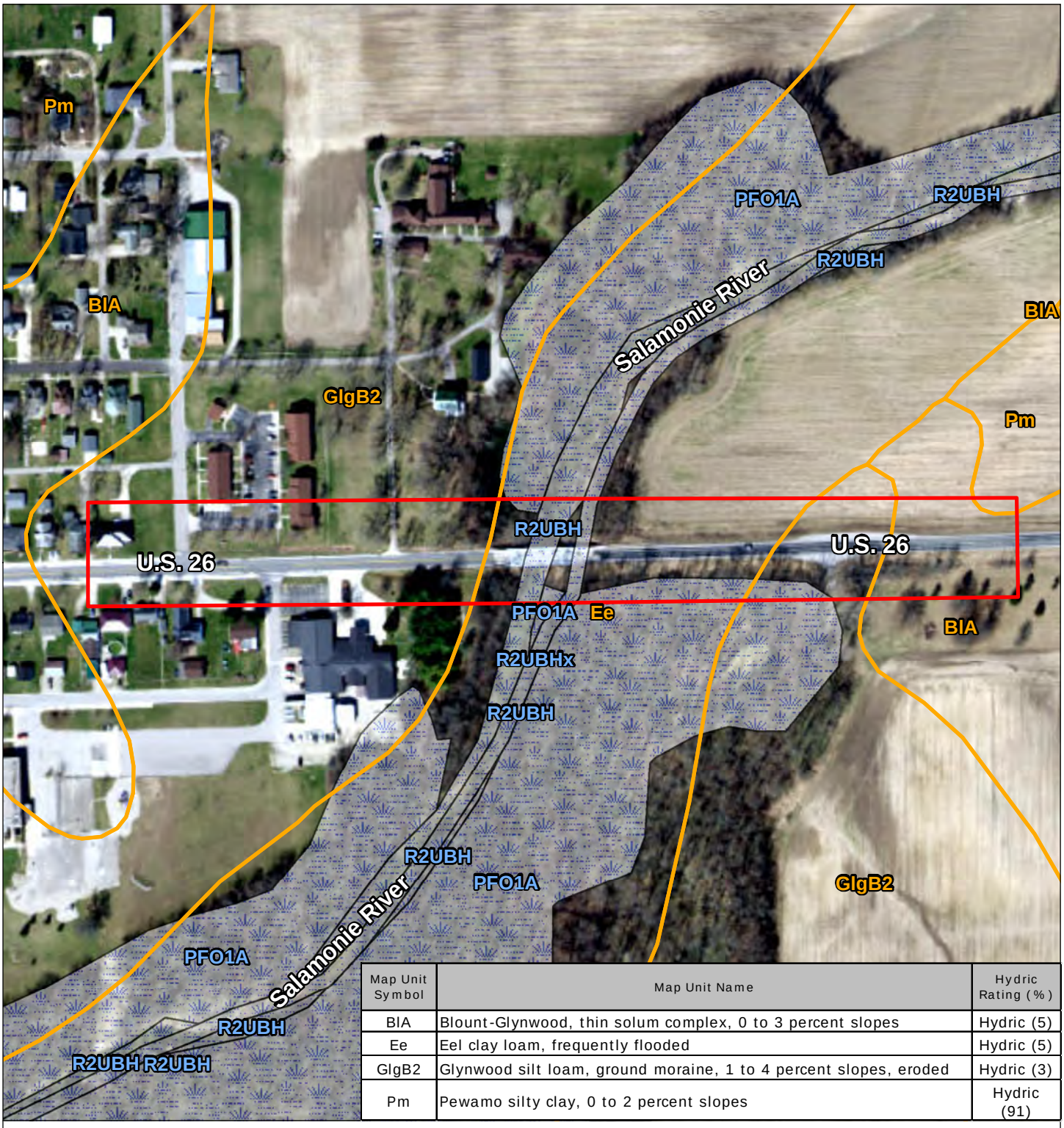
N

0 100 200 400

Feet

METRIC ENVIRONMENTAL

Exh. 3



Map Unit Symbol	Map Unit Name	Hydric Rating (%)
BIA	Blount-Glynwood, thin solum complex, 0 to 3 percent slopes	Hydric (5)
Ee	Eel clay loam, frequently flooded	Hydric (5)
GlgB2	Glynwood silt loam, ground moraine, 1 to 4 percent slopes, eroded	Hydric (3)
Pm	Pewamo silty clay, 0 to 2 percent slopes	Hydric (91)

Project Study Limits (PSL) NWI Wetland NRCS Soil Survey

Exhibit 3 - NWI Wetland and NRCS Soil Survey Map
S.R. 26 over Salamonie River
Bridge Replacememt
Wayne Township, Jay County, IN
Des. No. 1600828
Metric Project No. 17-0082
Map Date: 8/26/2019
Map Author: Cory Shumate

All locations approximate

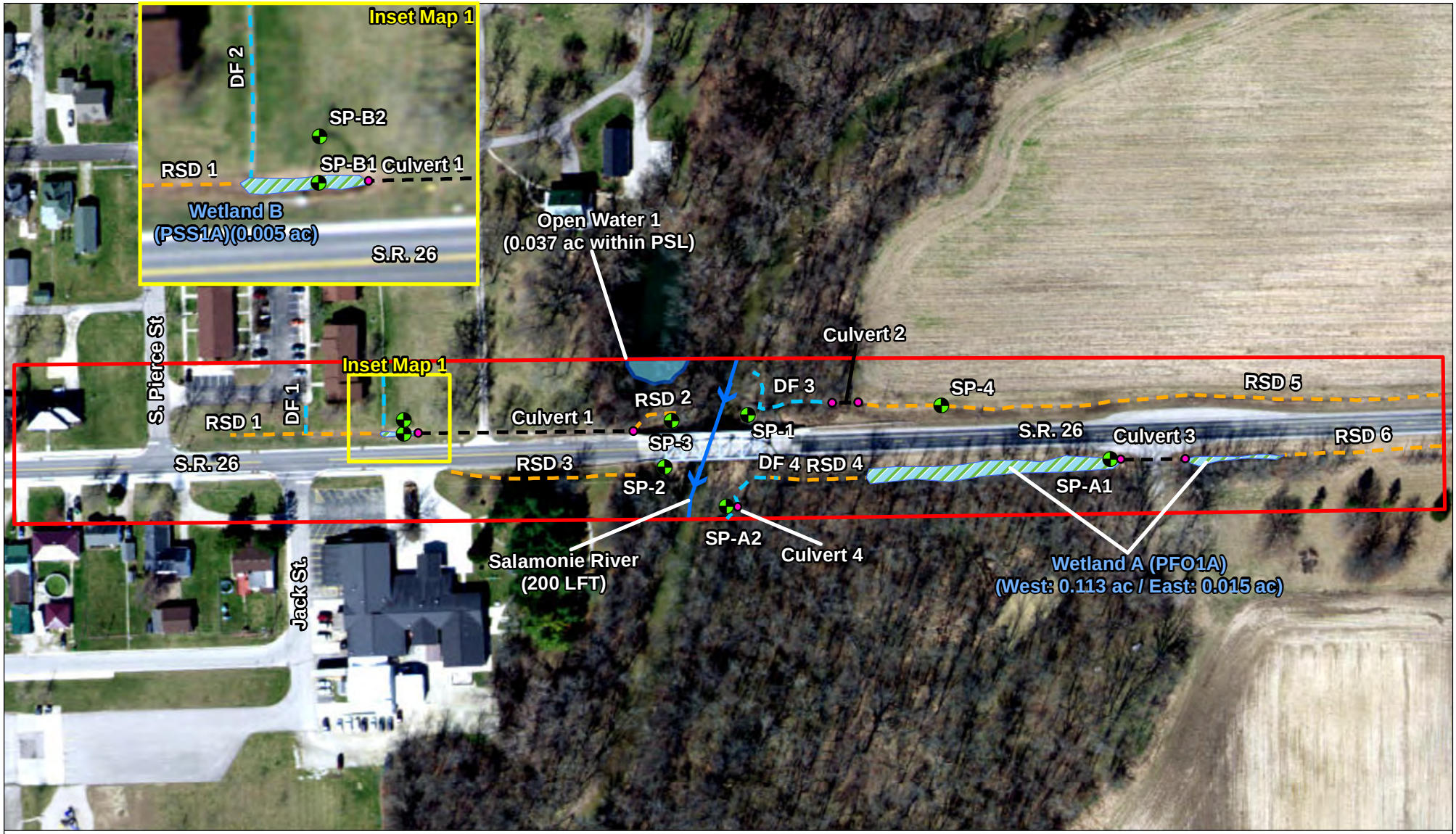
Source: Indiana Spatial Data Portal (2017)

N

0 100 200 400
Feet

METRIC ENVIRONMENTAL

Exh. 4



Project Study Limits (PSL) | Wetland | Open Water | Drainage Feature (DF) | Culvert Opening

Sampling Point (SP) | Stream | Roadside Ditch (RSD) | Culvert

Exhibit 4 - Waters Delineation Map
S.R. 26 over Salamonie River
Bridge Replacememt
Wayne Township, Jay County, IN
Des. No. 1600828
Metric Project No. 17-0082
Map Date: 9/3/2019
Map Author: Cory Shumate

All locations approximate
Source: Indiana Spatial Data Portal (2017)

N

0 125 250 500
Feet

METRIC ENVIRONMENTAL

Exh. 4

Project Study Limits (PSL) | Wetland | Open Water | Drainage Feature (DF) | Culvert Opening

Sampling Point (SP) | Stream | Roadside Ditch (RSD) | Culvert

Exhibit 6 - Photo Location Map
S.R. 26 over Salamonie River
Bridge Replacememt
Wayne Township, Jay County, IN
Des. No. 1600828
Metric Project No. 17-0082
Map Date: 9/3/2019
Map Author: Cory Shumate

All locations approximate
Source: Indiana Spatial Data Portal (2017)

N

0 125 250 500
Feet

METRIC ENVIRONMENTAL

Exh. 5

1. View of SP-A1, Wetland A, soil profile.

2. View of SP-A1, Wetland A, looking east.

3. View of SP-A1, Wetland A, looking west.

4. View of SP-A2, Wetland A upland, soil profile.

SITE PHOTOGRAPHS—8/28/2019
S.R. 26 over Salamonie River
Bridge Replacement
Wayne Township, Jay County, Indiana
Des. No. 1600828

METRIC ENVIRONMENTAL

5. View of SP-A2, Wetland A upland, looking west.

6. View of SP-A2, Wetland A upland, looking east.

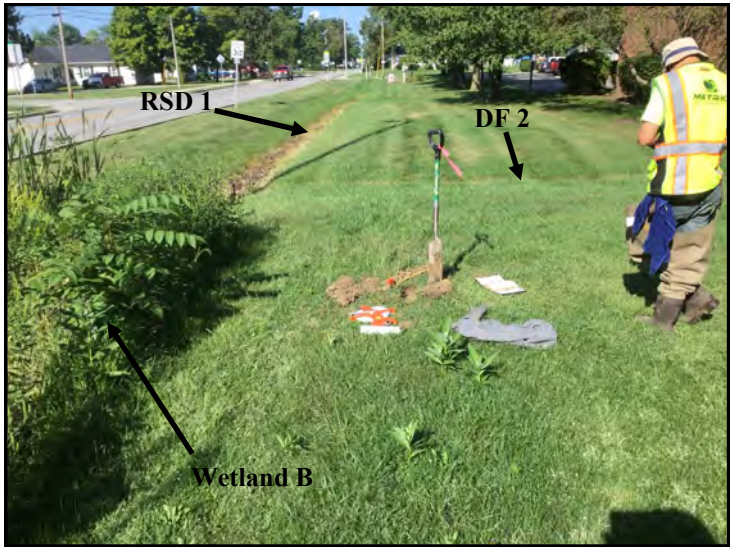
7. View of SP-B1, Wetland B, soil profile.

8. View of SP-B1, Wetland B, looking north.

9. View of SP-B1, Wetland B, looking west.

10. View of SP-B2, Wetland B upland, soil profile.

11. View of SP-B2, Wetland B upland, and Wetland B, looking east.



12. View of SP-B2, Wetland B upland, Wetland B, Roadside Ditch (RSD) 1, and Drainage Feature (DF) 2, looking west.

SITE PHOTOGRAPHS—8/28/2019
S.R. 26 over Salamonie River
Bridge Replacement
Wayne Township, Jay County, Indiana
Des. No. 1600828

METRIC ENVIRONMENTAL

13. View of SP-1, upland sampling point 1, soil profile.

14. View of SP-1, upland sampling point 1, looking southwest.

15. View of SP-1, upland sampling point 1, looking south.

16. View of SP-2, upland sampling point 2, soil profile.

17. View of SP-2, upland sampling point 2, looking east.

18. View of SP-2, upland sampling point 2, looking west.

19. View of SP-3, upland sampling point 3, soil profile.

20. View of SP-3, upland sampling point 3, looking southwest.

21. View of SP-3, upland sampling point 3, and RSD 2, looking northeast.

22. View of SP-4, upland sampling point 4, soil profile.

23. View of SP-4, upland sampling point 4, and RSD 5, looking southwest.

24. View of SP-4, upland sampling point 4, and RSD 5, looking east.

25. View of Salamonie River from northern project study limits (PSL), looking northeast (upstream).

26. View of eastern bank of Salamonie River and structure to be replaced (Bridge No. 026-38-03430 A/NIBI No. 007040) from northern PSL, looking southeast.

27. View of Salamonie River and structure to be replaced (Bridge No. 026-38-03430 A/NIBI No. 007040) from northern PSL, looking southwest (downstream).

28. View of western bank of Salamonie River from northern PSL, looking southwest.

29. View of eastern bank of Salamonie River, looking northeast.

30. View of Salamonie River, looking northeast (upstream).

31. View of western bank of Salamonie River, looking northwest.

32. View of western bank of Salamonie River, looking southwest.

33. View of Salamonie River, looking southwest (downstream).

34. View of eastern bank of Salamonie River, looking southeast.

35. View of western bank of Salamonie River from southern PSL, looking northwest.

36. View of Salamonie River and structure to be replaced (Bridge No. 026-38-03430 A/NIBI No. 007040) from southern PSL, looking northeast (upstream).

37. View of eastern bank of Salamonie River and structure to be replaced (Bridge No. 026-38-03430 A/NIBI No. 007040) from southern PSL, looking northeast.

38. View of Salamonie River from southern PSL, looking south-west (downstream).

39. View of bank of Open Water 1, looking northwest.

40. View of Open Water 1, looking north.

41. View of bank of Open Water 1, looking northeast.

42. View of S.R. 26 right-of-way (ROW) from western PSL, looking east.

43. View of S.R. 26 ROW from western PSL, looking east.

44. View of S.R. 26 ROW, RSD 1, and DF 1, looking east.

45. View of DF 1, looking north.

46. View of DF 2, looking north.

47. From inlet (western end) of Culvert 1, view of Culvert 1, looking east.

48. View of Wetland A from Culvert 1, looking west.

49. View of S.R. 26 ROW and RSD 3, looking east.

50. View of S.R. 26 ROW and RSD 3, looking northwest.

51. From outlet (eastern end) of Culvert 1, view of Culvert 1, looking southwest.

52. View of RSD 2, looking northeast.

53. View of end of DF 3 which drains into Salamonie River, looking northwest.

54. View of DF 3 from where DF 3 drains into Salamonie River, looking southeast.

55. View of Culvert 2 outlet, looking east.

56. View of DF 3 from Culvert 2 outlet, looking west.

57. View of Culvert 2 inlet, looking west.

58. View of RSD 5 from Culvert 2 inlet, looking east.

59. View of S.R. 26 ROW, looking west.

60. View of S.R. 26 ROW and RSD 5 from eastern PSL, looking west.

61. View of S.R. 26 ROW and RSD 6 from eastern PSL, looking west.

62. View of S.R. 26 ROW and RSD 6, looking east.

63. View of Wetland A, looking west.

64. View of Culvert 3 inlet, looking west.

65. View of Culvert 3 outlet, looking east.

66. View of Wetland A East from Culvert 3 inlet, looking east.

67. View of Wetland A West from Culvert 3 outlet, looking west.

68. View of RSD 4, looking west.

69. View of RSD 4, looking east.

70. View of DF 4, looking southwest.

71. View of DF 4, looking northeast.

72. View of Culvert 4, looking northeast.

73. View of DF 4, looking southwest.

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: Des 1600828 - S.R. 26 over Salamonie River City/County: Portland / Jay County Sampling Date: 8/28/2019

Applicant/Owner: INDOT State: IN Sampling Point: SP-A1

Investigator(s): Cory Shumate and Zachary Root Section, Township, Range: Section 21, Township 23 N, Range 14 E

Landform (hillslope, terrace, etc.): Toe of Hillslope Local relief (concave, convex, none): Concave

Slope (%): 1% Lat: 40.4325 Long: -84.96183 Datum: NAD83

Soil Map Unit Name: Glynwood silt loam, ground moraine, 1 to 4 percent slopes, eroded (GlgB2) - Hydric (3%) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? Yes x No ____

Remarks:
Wetland A (PFO1A) Sampling Point. Project study area received over an inch of rain between 8/26/2019 and 8/27/2019.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Juglans nigra*	20%	Yes	FACU
2.			
3.			
4.			
5.			
	20% = Total Cover		
Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. *Phalaris arundinacea*	80%	Yes	FACW
2. *Verbesina alternifolia*	10%	No	FACW
3. *Solidago gigantea*	10%	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	100% = Total Cover		
Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
	0% = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species	100%	x2 =	2
FAC species		x3 =	
FACU species	20%	x4 =	0.8
UPL species		x5 =	
Column Totals:	1.20 (A)		2.8 (B)

Prevalence Index = B/A = 2.33

Hydrophytic Vegetation Indicators:

____ 1-Rapid Test for Hydrophytic Vegetation

____ 2-Dominance Test is >50%

X 3-Prevalence Index is ≤3.0[1]

____ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: SP-A1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-11	10YR 3/1	85	5YR 3/4	15	C	PL	SiCL	Prominent redox concentrations.
11-20	10YR 3/1	80	10YR 5/8	15	C	M	SiCL	Prominent redox concentrations.
			5YR 3/4	5	C	PL		Prominent redox concentrations.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Dark Surface (S7)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** x **No** _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes ___ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** x **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Sampling point was located within a roadside ditch. Therefore, it meets the criteria for geomorphic position (D2).

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: Des 1600828 - S.R. 26 over Salamonie River | City/County: Portland / Jay County | Sampling Date: 8/28/2019

Applicant/Owner: INDOT | State: IN | Sampling Point: SP-A2

Investigator(s): Cory Shumate and Zachary Root | Section, Township, Range: Section 21, Township 23 N, Range 14 E

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): None

Slope (%): 0% | Lat: 40.43236 | Long: -84.96347 | Datum: NAD83

Soil Map Unit Name: Eel clay loam, frequently flooded (Ee) - Hydric (5%) | NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes ____ No X

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? Yes ____ No x

Remarks:
Wetland A Upland Sampling Point. Project study area received over an inch of rain between 8/26/2019 and 8/27/2019.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Celtis occidentalis*	40%	Yes	FAC
2. *Acer negundo*	30%	Yes	FAC
3. *Morus alba*	20%	Yes	FAC
4. *Maclura pomifera*	10%	No	FACU
5.			
	100%	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
	0%	= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. *Solidago gigantea*	50%	Yes	FACW
2. *Viola sororia*	30%	Yes	FAC
3. *Persicaria hydropiperoides*	20%	Yes	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	100%	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
	0%	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20%	x1 =	0.2
FACW species	50%	x2 =	1
FAC species	120%	x3 =	3.6
FACU species	10%	x4 =	0.4
UPL species		x5 =	
Column Totals:	2.00 (A)		5.2 (B)

Prevalence Index = B/A = 2.60

Hydrophytic Vegetation Indicators:

____ 1-Rapid Test for Hydrophytic Vegetation

X 2-Dominance Test is >50%

X 3-Prevalence Index is ≤3.0[1]

____ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: SP-A2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 4/2	100					SiCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Dark Surface (S7)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	
Water Table Present?	Yes ___ No X	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches):	

Wetland Hydrology Present? **Yes** x **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Sampling point was located on a terrace within the Q100 floodplain of Salamonie River. Therefore, it meets the criteria for geomorphic position (D2).

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: Des 1600828 - S.R. 26 over Salamonie River | City/County: Portland / Jay County | Sampling Date: 8/28/2019

Applicant/Owner: INDOT | State: IN | Sampling Point: SP-B1

Investigator(s): Cory Shumate and Zachary Root | Section, Township, Range: Section 21, Township 23 N, Range 14 E

Landform (hillslope, terrace, etc.): Drainage Ditch | Local relief (concave, convex, none): Concave

Slope (%): 2% | Lat: 40.4326 | Long: -84.96485 | Datum: NAD83

Soil Map Unit Name: Glynwood silt loam, ground moraine, 1 to 4 percent slopes, eroded (GlgB2) - Hydric (3%) | NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? Yes x No ____

Remarks:
Wetland B (PSS1A) Sampling Point. Project study area received over an inch of rain between 8/26/2019 and 8/27/2019.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0%	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Fraxinus pennsylvanica*	30%	Yes	FACW
2. *Juglans nigra*	10%	Yes	FACU
3.			
4.			
5.			
	40%	= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. *Typha latifolia*	50%	Yes	OBL
2. *Eupatorium perfoliatum*	30%	Yes	OBL
3. *Asclepias syriaca*	20%	No	FACU
4. *Solidago gigantea*	20%	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	120%	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
	0%	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	80%	x1 =	0.8
FACW species	50%	x2 =	1
FAC species		x3 =	
FACU species	30%	x4 =	1.2
UPL species		x5 =	
Column Totals:	1.60 (A)		3 (B)

Prevalence Index = B/A = 1.88

Hydrophytic Vegetation Indicators:

____ 1-Rapid Test for Hydrophytic Vegetation

X 2-Dominance Test is >50%

X 3-Prevalence Index is ≤3.0[1]

____ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: SP-B1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 4/2	75	10YR 5/3	15	C	M	SiCL	Faint redox concentrations
			7.5YR 5/8	10	C	M		Prominent redox concentrations
9-20	10YR 4/2	70	10YR 5/3	30	C	M	SiCL	Faint redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Dark Surface (S7)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** x **No** _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	
Water Table Present?	Yes ___ No X	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes X No ___	Depth (inches):	0

Wetland Hydrology Present? **Yes** x **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Sampling point was located within a concave drainage ditch. Therefore, it meets the criteria for geomorphic position (D2).

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: Des 1600828 - S.R. 26 over Salamonie River City/County: Portland / Jay County Sampling Date: 8/28/2019

Applicant/Owner: INDOT State: IN Sampling Point: SP-B2

Investigator(s): Cory Shumate and Zachary Root Section, Township, Range: Section 21, Township 23 N, Range 14 E

Landform (hillslope, terrace, etc.): Top of hillslope Local relief (concave, convex, none): None

Slope (%): 0% Lat: 40.43265 Long: -84.96484 Datum: NAD83

Soil Map Unit Name: Glynwood silt loam, ground moraine, 1 to 4 percent slopes, eroded (GlgB2) - Hydric (3%) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**	
Hydric Soil Present?	Yes ____	No X	**within a Wetland?**	Yes ____ No x
Wetland Hydrology Present?	Yes ____	No X		

Remarks:
Wetland B Upland Sampling Point. Project study area received over an inch of rain between 8/26/2019 and 8/27/2019.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0%	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
	0%	= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. *Festuca rubra*	50%	Yes	FACU
2. *Trifolium pratense*	50%	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	100%	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
	0%	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species	100%	x4 =	4
UPL species		x5 =	
Column Totals:	1.00 (A)		4 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

____ 1-Rapid Test for Hydrophytic Vegetation
____ 2-Dominance Test is >50%
____ 3-Prevalence Index is ≤3.0[1]
____ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ____ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: SP-B2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 5/1	50					SiCL	Mixed Matrix
	10YR 5/2	50						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Dark Surface (S7)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes ___ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: Des 1600828 - S.R. 26 over Salamonie River City/County: Portland / Jay County Sampling Date: 8/28/2019

Applicant/Owner: INDOT State: IN Sampling Point: SP-1

Investigator(s): Cory Shumate and Zachary Root Section, Township, Range: Section 21, Township 23 N, Range 14 E

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None

Slope (%): 0% Lat: 40.43266 Long: -84.96338 Datum: NAD83

Soil Map Unit Name: Eel clay loam, frequently flooded (Ee) - Hydric (5%) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes ____ No X

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? Yes ____ No x

Remarks:
Upland Sampling Point 1. Project study area received over an inch of rain between 8/26/2019 and 8/27/2019.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Crataegus phaenopyrum*	20%	Yes	FAC
2. *Acer negundo*	20%	Yes	FAC
3.			
4.			
5.			
	40% = Total Cover		

Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		

Herb Stratum (Plot size: 5' radius)			
1. *Phalaris arundinacea*	80%	Yes	FACW
2. *Ambrosia trifida*	20%	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	100% = Total Cover		

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
	0% = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species	80%	x2 =	1.6
FAC species	60%	x3 =	1.8
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	1.40 (A)		3.4 (B)

Prevalence Index = B/A = 2.43

Hydrophytic Vegetation Indicators:

____ 1-Rapid Test for Hydrophytic Vegetation

X 2-Dominance Test is >50%

X 3-Prevalence Index is ≤3.0[1]

____ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: SP-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 4/2	100					SiCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Dark Surface (S7)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	
Water Table Present?	Yes ___ No X	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches):	

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Sampling point is located on a stream terrace within the Q100 floodplain of Salamonie River. Therefore, it meets the criteria of geomorphic position (D2).

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: Des 1600828 - S.R. 26 over Salamonie River City/County: Portland / Jay County Sampling Date: 8/28/2019

Applicant/Owner: INDOT State: IN Sampling Point: SP-2

Investigator(s): Cory Shumate and Zachary Root Section, Township, Range: Section 21, Township 23 N, Range 14 E

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None

Slope (%): 1% Lat: 40.43249 Long: -84.96373 Datum: NAD83

Soil Map Unit Name: Eel clay loam, frequently flooded (Ee) - Hydric (5%) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes ____ No X

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? Yes ____ No x

Remarks:
Upland Sampling Point 2. Project study area received over an inch of rain between 8/26/2019 and 8/27/2019.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0%	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
	0%	= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. *Phalaris arundinacea*	80%	Yes	FACW
2. *Ambrosia trifida*	20%	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	100%	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
	0%	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species	80%	x2 =	1.6
FAC species	20%	x3 =	0.6
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	1.00 (A)		2.2 (B)

Prevalence Index = B/A = 2.20

Hydrophytic Vegetation Indicators:

____ 1-Rapid Test for Hydrophytic Vegetation

X 2-Dominance Test is >50%

X 3-Prevalence Index is ≤3.0[1]

____ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: SP-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 4/2	100					SiCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Dark Surface (S7)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches): ___	
Water Table Present?	Yes ___ No X	Depth (inches): ___	
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches): ___	**Wetland Hydrology Present?** **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Sampling point is located on a stream terrace within the Q100 floodplain of Salamonie River. Therefore, it meets the criteria of geomorphic position (D2).

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: Des 1600828 - S.R. 26 over Salamonie River City/County: Portland / Jay County Sampling Date: 8/28/2019

Applicant/Owner: INDOT State: IN Sampling Point: SP-3

Investigator(s): Cory Shumate and Zachary Root Section, Township, Range: Section 21, Township 23 N, Range 14 E

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None

Slope (%): 0% Lat: 40.43264 Long: -84.9637 Datum: NAD83

Soil Map Unit Name: Eel clay loam, frequently flooded (Ee) - Hydric (5%) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes ____ No X

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? Yes ____ No x

Remarks:
Upland Sampling Point 2. Project study area received over an inch of rain between 8/26/2019 and 8/27/2019.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		

Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		

Herb Stratum (Plot size: 5' radius)			
1. *Phalaris arundinacea*	100%	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	100% = Total Cover		

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
	0% = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species	100%	x2 =	2
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	1.00 (A)		2 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

X 1-Rapid Test for Hydrophytic Vegetation

X 2-Dominance Test is >50%

X 3-Prevalence Index is ≤3.0[1]

____ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: SP-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 4/2	100					SiCL	
18-20	10YR 3/4	45	10YR 6/4	10	C	M	SiCL	Mixed Matrix; Distinct redox concentrations
	10YR 4/1	45						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Dark Surface (S7)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches): ___	
Water Table Present?	Yes ___ No X	Depth (inches): ___	
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches): ___	**Wetland Hydrology Present?** **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Sampling point is located on a stream terrace within the Q100 floodplain of Salamonie River. Therefore, it meets the criteria for geomorphic position (D2).

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: Des 1600828 - S.R. 26 over Salamonie River City/County: Portland / Jay County Sampling Date: 8/28/2019

Applicant/Owner: INDOT State: IN Sampling Point: SP-4

Investigator(s): Cory Shumate and Zachary Root Section, Township, Range: Section 21, Township 23 N, Range 14 E

Landform (hillslope, terrace, etc.): Toe of hillslope Local relief (concave, convex, none): Concave

Slope (%): 5% Lat: 40.43268 Long: -84.96255 Datum: NAD83

Soil Map Unit Name: Eel clay loam, frequently flooded (Ee) - Hydric (5%) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes ____ No X

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? Yes ____ No x

Remarks:
Upland Sampling Point 4. Project study area received over an inch of rain between 8/26/2019 and 8/27/2019.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0%	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
	0%	= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. *Phalaris arundinacea*	90%	Yes	FACW
2. *Cirsium arvense*	20%	No	FACU
3. *Convolvulus arvensis*	20%	No	UPL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	130%	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
	0%	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species	90%	x2 =	1.8
FAC species		x3 =	
FACU species	20%	x4 =	0.8
UPL species	20%	x5 =	1
Column Totals:	1.30 (A)		3.6 (B)

Prevalence Index = B/A = 2.77

Hydrophytic Vegetation Indicators:

X 1-Rapid Test for Hydrophytic Vegetation

X 2-Dominance Test is >50%

X 3-Prevalence Index is ≤3.0[1]

____ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: SP-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-11	10YR 3/2	100					SiCL	
11-20	10YR 3/2	50					SiCL	Mixed Matrix
	10YR 4/2	50						Mixed Matrix

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Dark Surface (S7)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches): ___	
Water Table Present?	Yes ___ No X	Depth (inches): ___	
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches): ___	**Wetland Hydrology Present?** **Yes** x **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Sampling point met the criteria for geomorphic position (D2) due to its location at the toe of a hillslope within a roadside ditch.

Appendix 2 - PRELIMINARY JURISDICTIONAL DETERMINATION (PJD) FORM

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PJD: April 2, 2020

B. NAME AND ADDRESS OF PERSON REQUESTING PJD:

Cory Shumate
Metric Environmental, LLC
6971 Hillsdale Court
Indianapolis, IN 46250
(317) 350-4896
corys@metricenv.com

C. DISTRICT OFFICE, FILE NAME, AND NUMBER:

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:

The proposed project (Des. No. 1600828) includes the replacement of the existing bridge (Bridge No. 026-38-03430 A/NIBI No. 007040), which carries S.R. 26 over Salamonie River in Wayne Township, Jay County, Indiana. The existing structure is 150 ft. long span with 28 ft clear roadway width curb-to-curb. The proposed improvements include the installation of a two-lane bridge that is 3-span with 30-ft. clear roadway width, subject to change upon further project design.

(USE THE TABLE BELOW TO DOCUMENT MULTIPLE AQUATIC RESOURCES AND/OR AQUATIC RESOURCES AT DIFFERENT SITES)

State: IN County/parish/borough: Jay County City: Portland
Center coordinates of site (lat/long in degree decimal format):
Lat.: 40.43258°
Long.: -84.96348°
Universal Transverse Mercator: 16 S 672740.68 E 4477762.64 N
Name of nearest waterbody: Salamonie River

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

☐ Office (Desk) Determination. Date:

☐ Field Determination. Date(s):

TABLE OF AQUATIC RESOURCES IN REVIEW AREA WHICH "MAY BE" SUBJECT TO REGULATORY JURISDICTION.

Site number	Latitude (decimal degrees)	Longitude (decimal degrees)	Estimated amount of aquatic resource in review area (acreage and linear feet, if applicable)	Type of aquatic resource (i.e., wetland vs. non-wetland waters)	Geographic authority to which the aquatic resource "may be" subject (i.e., Section 404 or Section 10/404)
UNT 1	40.43258	-84.96353	200 LFT	Non-wetland waters	Section 404
Open Water 1	40.43281	-84.96376	0.037 acre	Non-wetland Waters	Section 404

1) The Corps of Engineers believes that there may be jurisdictional aquatic resources in the review area, and the requestor of this PJD is hereby advised of his or her option to request and obtain an approved JD (AJD) for that review area based on an informed decision after having discussed the various types of JDs and their characteristics and circumstances when they may be appropriate.

2) In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an AJD for the activity, the permit applicant is hereby made aware that: (1) the permit applicant has elected to seek a permit authorization based on a PJD, which does not make an official determination of jurisdictional aquatic resources; (2) the applicant has the option to request an AJD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an AJD could possibly result in less compensatory mitigation being required or different special conditions; (3) the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) undertaking any activity in reliance upon the subject permit authorization without requesting an AJD constitutes the applicant's acceptance of the use of the PJD; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a PJD constitutes agreement that all aquatic resources in the review area affected in any way by that activity will be treated as jurisdictional, and waives any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an AJD or a PJD, the JD will be processed as soon as practicable. Further, an AJD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331. If, during an administrative appeal, it becomes appropriate to make an official determination whether geographic jurisdiction exists over aquatic resources in the review area, or to provide an official delineation of jurisdictional aquatic resources in the review area, the Corps will provide an AJD to accomplish that result, as soon as is practicable. This PJD finds that there *"may be"* waters of the U.S. and/or that there *"may be"* navigable waters of the U.S. on the subject review area, and identifies all aquatic features in the review area that could be affected by the proposed activity, based on the following information:

SUPPORTING DATA. Data reviewed for PJD (check all that apply)

Checked items should be included in subject file. Appropriately reference sources below where indicated for all checked items:

- [x] Maps, plans, plots or plat submitted by or on behalf of the PJD requestor:
- [x] Map: Dated 8/5/2019, 8/26/2019, and 9/3/2019

  Data sheets prepared/submitted by or on behalf of the PJD requestor.
  - [ ] Office concurs with data sheets/delineation report.
  - [ ] Office does not concur with data sheets/delineation report. Rationale: _____.
- [ ] Data sheets prepared by the Corps: _____.
- [ ] Corps navigable waters' study: _____.
- [ ] U.S. Geological Survey Hydrologic Atlas: _____.
  - [x] USGS NHD data.
  - [x] USGS 8 and 12 digit HUC maps.
- [x] U.S. Geological Survey map(s). Cite scale & quad name: Portland, IN 7.5 min, 1996
- [x] Natural Resources Conservation Service Soil Survey. Citation: SSURGO Jay County
- [x] National wetlands inventory map(s). Cite name: http://www.fws.gov/wetlands/ .
- [ ] State/local wetland inventory map(s): _____.
- [x] FEMA/FIRM maps: ; Effective _____
- [ ] 100-year Floodplain Elevation is: _____.(National Geodetic Vertical Datum of 1929)
- [x] Photographs: [x] Aerial (Name & Date): Indiana Aerial Photograph, 2017 .

  or [x] Other (Name & Date): Site Photographs, 8/28/2019.
- [ ] Previous determination(s). File no. and date of response letter: _____.
- [ ] Other information (please specify): _____.

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

_____	CShumack 4/2/2020
Signature and date of Regulatory staff member completing PJD	Signature and date of person requesting PJD (REQUIRED, unless obtaining the signature is impracticable)[1]

[1] Districts may establish timeframes for requestor to return signed PJD forms. If the requestor does not respond within the established time frame, the district may presume concurrence and no additional follow up is necessary prior to finalizing an action.

Appendix G Public Involvement
(This appendix will be updated after the public involvement process is complete)

INDIANA DEPARTMENT OF TRANSPORTATION
Driving Indiana's Economic Growth

Land & Aerial Survey Office
Division of Materials & Tests Building
120 South Shortridge Road
Indianapolis, Indiana 46219-6705

PHONE: (317) 610-7251
FAX: (317) 356-9351

Eric J. Holcomb, Governor
Joe McGuinness, Commissioner

December 4, 2017

[redacted]

EXAMPLE

NOTICE OF SURVEY

Dear Property Owner:

USI Consultants, under contract with The Indiana Department of Transportation (INDOT), will perform a survey for the proposed Bridge Study project on SR26 Bridge over Salamonie River, Des No. 1600828, in Jay County, Indiana. A portion of this survey work may be performed on your property in order to provide design engineers information for project design. The survey work will include mapping the location of features such as trees, buildings, fences, drives, ground elevations, etc. The survey is needed for the proper planning and design of this highway project.

At this stage we generally do not know what effect, if any, our project may eventually have on your property. If we determine later that your property is involved, we will contact you with additional information.

Indiana Code 8-23-7-26 allows USI Consultants, as the authorized employees of INDOT, *Right of Entry* to the project site (including private property) upon proper notification. A copy of a Notice of Survey discussion sheet, as found on INDOT's website (http://www.in.gov/indot/2888.htm), is attached to this letter. Pursuant to Indiana Code 8-23-7-27, this letter serves as written notification that we will be performing the above noted survey in the vicinity of your property after December 4, 2017.

USI Consultants employees will show you their identification, if you are available, before coming onto your property.

If you own but are not the tenant of this property (i.e. rental, sharecrop), please inform us so that we may also contact the actual tenant of the property prior to commencement of our work. If you have any questions or concerns regarding our proposed survey work or schedule, please contact the USI Consultants Survey Manager. This contact information is as follows:

Mark A. Schepers
8415 E. 56th St.
Indianapolis, IN 46216
317-544-4996

INDIANA DEPARTMENT OF TRANSPORTATION
Driving Indiana's Economic Growth

Land & Aerial Survey Office
Division of Materials & Tests Building
120 South Shortridge Road
Indianapolis, Indiana 46219-6705

PHONE: (317) 610-7251
FAX: (317) 356-9351

Eric J. Holcomb, Governor
Joe McGuinness, Commissioner

Under Indiana Code 8-23-7-28, you have a right to compensation for any damage that occurs to your land or water as a result of the entry or work performed during the entry. To obtain such compensation, you should contact the Central Office District Real Estate Manager; contact information is below. The District Real Estate Manager can provide you with a form to request compensation for damages. Once you fill out this form, you can return it to the District Real Estate Manager for consideration. If you are not satisfied with the compensation that INDOT determines is owed to you, Indiana Code 8-23-7-28 provides the following:

> The amount of damages shall be assessed by the county agricultural extension educator of the county in which the land or water is located and two (2) disinterested residents of the county, one (1) appointed by the aggrieved party and one (1) appointed by the department. A written report of the assessment of damages shall be mailed to the aggrieved party and the department by first class United States mail. If either the department or the aggrieved party is not satisfied with the assessment of damages, either or both may file a petition, not later than fifteen (15) days after receiving the report, in the circuit or superior court of the county in which the land or water is located.

If you have questions regarding the rights and procedures outlined in this letter, please contact the Greenfield Real Estate Manager. This contact information is as follows:

Josh Betz
32 S. Broadway St.
Greenfield, IN 46140
317-467-3402

Thank you in advance for your cooperation in this matter.

Sincerely,

Mark A. Schepers
Survey Operations Manager

Appendix H
Air Quality

Indiana Department of Transportation (INDOT)

State Preservation and Local Initiated Projects FY 2020 - 2024

SPONSOR	CONTRACT # / LEAD DES	STIP NAME	ROUTE	WORK TYPE	LOCATION	DISTRICT	MILES	FEDERAL CATEGORY	Estimated Cost left to Complete Project*	PROGRAM	PHASE	FEDERAL	MATCH	2020	2021	2022	2023	2024
Indiana Department of Transportation	39734 / 1600624	Init.	US 27	Vertical Sight Correction	4 miles N of SR26/SR67 (Vota w St) at CR 400N	Greenfield	.22	NHPP		Bridge Construction	CN	$357,381.60	$89,345.40		$446,727.00			
										Bridge ROW	RW	$16,000.00	$4,000.00	$20,000.00				
										Safety Construction	CN	$730,054.40	$182,513.60		$912,568.00			
Indiana Department of Transportation	39818 / 1600828	Init.	SR 26	Truss Reconstruction Or Repair	Over Salamonie River, .78 miles E of US 27	Greenfield	0	STPBG		Bridge Construction	CN	$1,538,696.00	$384,674.00		$1,923,370.00			
										Bridge ROW	RW	$40,000.00	$10,000.00	$50,000.00				
Indiana Department of Transportation	39818 / 1600828	M 10	SR 26	Bridge Replacement	Over Salamonie River, .78 miles E of US 27	Greenfield	0	STBG	$2,012,120.00	Bridge ROW	RW	$0.00	$0.00	($50,000.00)	$50,000.00			
Comments:Moving FY 2020 ROW $50,000 to FY 2021 ROW $50,000																		
Indiana Department of Transportation	39818 / 1600828	M 22	SR 26	Bridge Replacement	Over Salamonie River, .78 miles E of US 27	Greenfield	0	STBG	$2,012,120.00	Bridge Construction	CN	$0.00	$0.00		($1,923,370.00)	$1,923,370.00		
Comments:Moving CN from 2021 to 2022																		
Portland	40318 / 1600946	Init.	IR 1015	Bike/Pedestrian Facilities	City of Portland Sidewalk Project	Greenfield	.37	STPBG		Local Funds	CN	$0.00	$144,400.00			$144,400.00		
										Local Transportation Alternatives	CN	$337,600.00	$0.00			$337,600.00		
Portland	40319 / 1600965	Init.	IR 1023	HMA Overlay, Preventive Maintenance	Blaine Pike Project- Water St on N to CR 150 W on S	Greenfield	1.24	STPBG		Group III Program	CN	$1,084,000.00	$0.00			$1,084,000.00		
										Local Funds	RW	$0.00	$494,600.00	$494,600.00				
										Local Funds	CN	$0.00	$531,000.00			$531,000.00		
Portland	40319 / 1600965	M 04	IR 1023	HMA Overlay, Preventive Maintenance	Blaine Pike Project- Water St on N to CR 150 W on S	Greenfield	1.24	STBG	$2,103,160.00	Group III Program	RW	$395,680.00	$0.00	$395,680.00				
										Local Funds	RW	$0.00	-$402,120.00	($402,120.00)				
Comments:NO MPO - Please reduce RW FY 20 to 92,480 (a reduction of 402,120) and add Federal FY 20 RW 395,680.																		
Portland	40319 / 1600965	M 07	IR 1023	Road Rehabilitation (3 R/4R Standards)	Blaine Pike Project- Water St on N to CR 150 W on S	Greenfield	1.24	STBG	$247,800.00	Group III Program	RW	$0.00	$0.00	($395,680.00)	$395,680.00			
										Local Funds	RW	$0.00	$0.00	($98,920.00)	$98,920.00			
Comments:NO MPO - Moving RW from FY 2020 to FY 2021 - Federal 395,680 and Local 98,920 - Work type was incorrect when project began. Changing from HMA Overlay to Road Rehabilitation (3R / 4R) -change needs made due to PO request was opened under HMA Overlay and to get any further PO requests with corrected work type need to get adjusted in STIP .																		
Redkey	40320 / 1600972	Init.	ST 1035	Bike/Pedestrian Facilities	Town Park Sidewalk in Redkey	Greenfield	.265	STPBG		Group IV Program	CN	$89,600.00	$0.00			$89,600.00		

*Estimated Costs left to Complete Project column is for costs that may extend beyond the four years of a STIP. This column is not fiscally constrained and is for information purposes.

Indiana Department of Transportation (INDOT)

State Preservation and Local Initiated Projects FY 2018 - 2021

SPONSOR	CONTRACT # / LEAD DES	STIP NAME	ROUTE	WORK TYPE	LOCATION	DISTRICT	MILES	FEDERAL CATEGORY	Estimated Cost left to Complete Project*	PROGRAM	PHASE	FEDERAL	MATCH	2018	2019	2020	2021
Indiana Department of Transportation	38604 / 1401834	Init.	SR 18	Small Structure Replacement	3.16 miles E of SR 1, over Haskin Run	Fort Wayne	.04	STP		Bridge ROW	RW	$36,800.00	$9,200.00	$46,000.00			
Indiana Department of Transportation	38604 / 1401835	Init.	SR 18	Small Structure Replacement	3.49 miles E of SR 1, over Borne-Williams Ditch	Fort Wayne	.041	STP		Bridge Construction	CN	$657,040.00	$164,260.00		$5,000.00	$816,300.00	
										Bridge Construction	PE	$16,000.00	$4,000.00		$20,000.00		
										Bridge ROW	RW	$29,600.00	$7,400.00	$37,000.00			
Indiana Department of Transportation	38983 / 1592312	Init.	US 27	Bridge Deck Overlay	Over Bear Creek, 5.23 miles N of SR 67/SR26	Greenfield	0	NHPP		Bridge Construction	CN	$449,393.60	$112,348.40		$561,742.00		
Indiana Department of Transportation	39734 / 1600624	Init.	US 27	Vertical Sight Correction	4 miles N of SR26/SR67 (Vota w St) at CR 400N	Greenfield	.22	NHPP		Safety Construction	CN	$696,591.20	$174,147.80				$870,739.00
										Safety Consulting	PE	$112,000.00	$28,000.00	$140,000.00			
										Safety ROW	RW	$80,000.00	$20,000.00		$100,000.00		
Indiana Department of Transportation	39818 / 1600828	Init.	SR 26	Truss Reconstruction Or Repair	over Salamonie River, .78 miles east of US 27	Greenfield	0	STP		Bridge Consulting	PE	$200,000.00	$50,000.00	$250,000.00			
										Bridge ROW	RW	$40,000.00	$10,000.00			$50,000.00	
										Bridge Construction	CN	$1,478,754.40	$369,688.60				$1,848,443.00
Indiana Department of Transportation	39823 / 1600935	Init.	US 27	Small Structure Replacement	3.9 mi. N. of SR 26	Greenfield	0	NHPP		Road Consulting	PE	$60,000.00	$15,000.00		$75,000.00		
										Road Construction	CN	$359,435.20	$89,858.80				$449,294.00
										Road ROW	RW	$16,000.00	$4,000.00			$20,000.00	
Portland	40318 / 1600946	A 02	IR 1015	Bike/Pedestrian Facilities	City of Portland Sidewalk Project	Greenfield	.37	STP	$643,700.00	Group III Program	PE	$129,360.00	$0.00	$129,360.00			
										Local Funds	PE	$0.00	$32,340.00	$32,340.00			
Comments:No MPO - Add PE FY 18 Federal 129,360 and Local 32,340																	
Portland	40318 / 1600946	M 08	IR 1015	Bike/Pedestrian Facilities	City of Portland Sidewalk Project	Greenfield	.37	TA	$593,700.00	Local Funds	PE	$0.00	$0.00	($22,340.00)	$22,340.00		
										Local Transportation Alternatives	PE	$0.00	$0.00	($89,360.00)	$89,360.00		
Comments:NO MPO - Move PE Federal of 89,360 from FY 18 to FY 19 and Local PE FY to FY 19 22,340.																	

Report Created:6/17/2019 12:31:59PM

*Estimated Costs left to Complete Project column is for costs that may extend beyond the four years of a STIP. This column is not fiscally constrained and is for information purposes.

Appendix I
Additional Information

Land and Water Conservation Fund (LWCF) County Property List for Indiana (Last Updated July 2020)

ProjectNumber	SubProjectCode	County	Property
1800187	1800187	Jay	Sportland Park
1800243	1800243	Jay	North End Park (Milton Miller Memorial Park)

*Park names may have changed. If acquisition of publically owned land or impacts to publically owned land is anticipated, coordination with IDNR, Division of Outdoor Recreation, should occur.

Environmental Justice Analysis

Des. 1600828, SR 26 over Salamonie River, Jay Co.

Project Description
This historic bridge project is in Wayne Township, Jay County, Indiana. The project is located on SR 26 and involves INDOT Bridge No. 026-38-03430A (NBI 007040) on SR 26 over Salamonie River, 0.78 mile east of US 27, on the east side of the City of Portland. INDOT Bridge No. 026-38-03430A is a single span, steel Parker through truss structure built in 1941 and has been determined eligible for the National Register of Historic Places. The need for this project is due to the existing bridge not meeting current INDOT design criteria for capacity or shoulder width. Currently, the proposed preferred alternative is replacement, with construction of a new bridge on essentially the same alignment as existing. Approximately 0.73 acre of permanent right-of-way will be required.

Under FHWA Order 6640.23A, FHWA and the project sponsor, as a recipient of funding from FHWA, are responsible to ensure that their programs, policies, and activities do not have a disproportionately high and adverse effect on minority or low-income populations. Per the current INDOT Categorical Exclusion Manual, an Environmental Justice (EJ) Analysis is required for any project that has two or more relocations or 0.5 acre of additional permanent right-of-way. The project will require approximately 0.73 acre of permanent right-of-way and no relocations. Therefore, an EJ Analysis is required.

Potential EJ impacts are detected by locating minority and low-income populations relative to a reference population to determine if populations of EJ concern exists and whether there could be disproportionately high and adverse impacts to them. The reference population may be a county, city or town and is called the community of comparison (COC). In this project, the COC is Jay Co. The community that overlaps the project area is called the affected community (AC). In this project, the ACs are Census Tract 9629 and Census Tract 9630 in Jay Co. An AC has a population of concern for EJ if the population is more than 50% minority or low-income or if the low-income or minority population is 125% of the COC. Data from the 2018 American Community Survey (ACS) 5-year estimates was obtained from the US Census Bureau Website https://factfinder.census.gov/ on December 13, 2020 by SJCA Inc. The data collected for minority and low-income populations within the AC are summarized in the below table:

Table: Minority and Low-Income Data (Source Data and Year)			
	COC – Jay Co.	AC-1 - Census Tract 9629, Jay County, Indiana	AC-2 - Census Tract 9630, Jay County, Indiana
Percent Minority	5%	2.9%	11.5%
125% of COC	6.2%	AC < 125% COC	AC > 125% COC
EJ Population of Concern		No	Yes
Percent Low-Income	16.9%	11.7%	13.2%
125% of COC	21.1 %	AC < 125% COC	AC < 125% COC
EJ Population of Concern		No	No

*Refer to the INDOT EJ guidance for calculating percentages

AC-1, Census Tract 9629, has a percent minority of 2.9% which is below 50% and is below the 125% COC threshold. AC-2, Census Tract 9630, has a percent minority of 11.5% which is below 50% but is above the 125% COC. Therefore, AC-2 is a minority population of EJ concern.

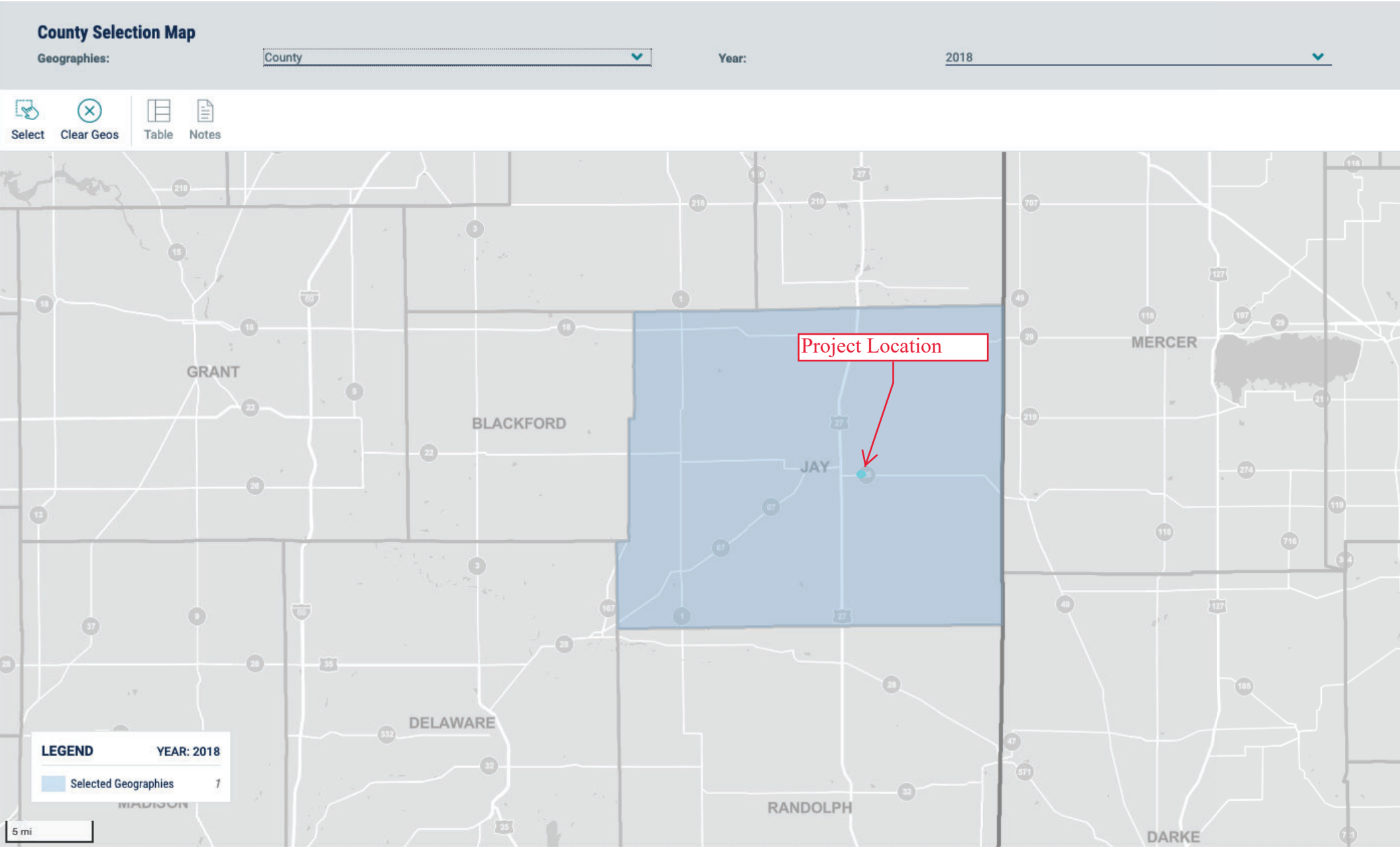
AC-1, Census Tract 9629, has a percent low-income of 11.7% which is below 50% and is below the 125% COC threshold. AC-2, Census Tract 9630, has a percent low-income of 13.2% which is below 50% and is below the 125% COC threshold. Therefore, both AC's do not contain low-income populations of EJ concern.

The project will provide community-wide positive impacts in the form of an improved crossing over Salamonie River for all travelers regardless of income or ethnicity. Right-of-way acquisition will occur along the roadway and riparian corridor of the river, without relocation of residences or businesses. The detour route will impact all travelers regardless of income or ethnicity and will not impact EJ populations more than any other population. The EJ analysis conducted for this project was forwarded to INDOT ESD on December 22, 2020.

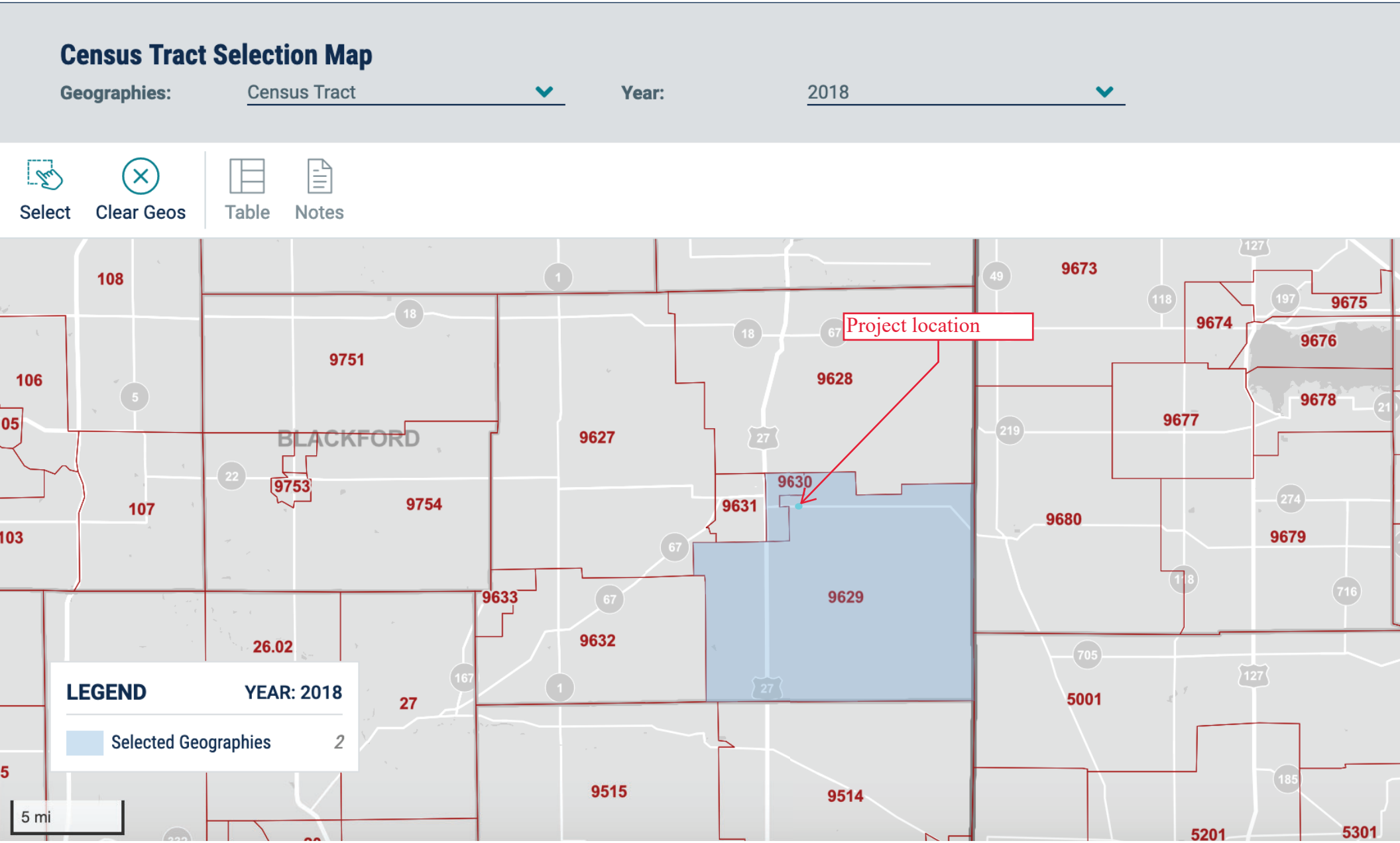
Environmental Justice Analysis for SR 26 over Salamonie River (Des. 1600828)

		COC Jay County, Indiana	AC1 Census Tract 9629, Jay County, Indiana	AC2 Census Tract 9630, Jay County, Indiana
	LOW-INCOME			
B 17001001	Population for whom poverty status is determined: Total	20,648	2,724	2,243
B 17001002	Population for whom poverty status is determined:Income in past 12 months below poverty	3,482	319	295
	Percent Low-Income	**16.9%**	**11.7%**	**13.2%**
	125 Percent of COC	**21.1%**	**AC<125% COC**	**AC<125% COC**
	Potential Low-Income EJ Impact?		**No**	**No**
	MINORITY			
B 03002001	Total population: Total	20,993	2,733	2,301
B 03002002	Total population: Not Hispanic or Latino	20,353	2,671	2,076
B 03002003	Total population: Not Hispanic or Latino; White alone	19,944	2,655	2,037
B 03002004	Total population: Not Hispanic or Latino; Black or African American alone	90	0	13
B 03002005	Total population: Not Hispanic or Latino; American Indian and Alaska Native alone	13	0	0
B 03002006	Total population: Not Hispanic or Latino; Asian alone	45	0	12
B 03002007	Total population: Not Hispanic or Latino; Native Hawaiian and Other Pacific Islander alone	1	0	0
B 03002008	Total population: Not Hispanic or Latino; Some other race alone	0	0	0
B 03002009	Total population: Not Hispanic or Latino; Two or more races	260	16	14
B 03002010	Total population: Hispanic or Latino	640	62	225
B 03002011	Total population: Hispanic or Latino; White alone	473	62	225
B 03002012	Total population: Hispanic or Latino; Black or African American alone	0	0	0
B 03002013	Total population: Hispanic or Latino; American Indian and Alaska Native alone	0	0	0
B 03002014	Total population: Hispanic or Latino; Asian alone	0	0	0
B 03002015	Total population: Hispanic or Latino; Native Hawaiian and Other Pacific Islander alone	0	0	0
B 03002016	Total population: Hispanic or Latino; Some other race alone	128	0	0
B 03002017	Total population: Hispanic or Latino; Two or more races	39	0	0
	Number Non-White/Minority (P007001-P007003)	**1,049**	**78**	**264**
	Percent Non-White/Minority	**5.0%**	**2.9%**	**11.5%**
	125 Percent of COC	**6.2%**	**AC<125% COC**	**AC>125% COC**
	Potential Minority EJ Impact?		**No**	**Yes**

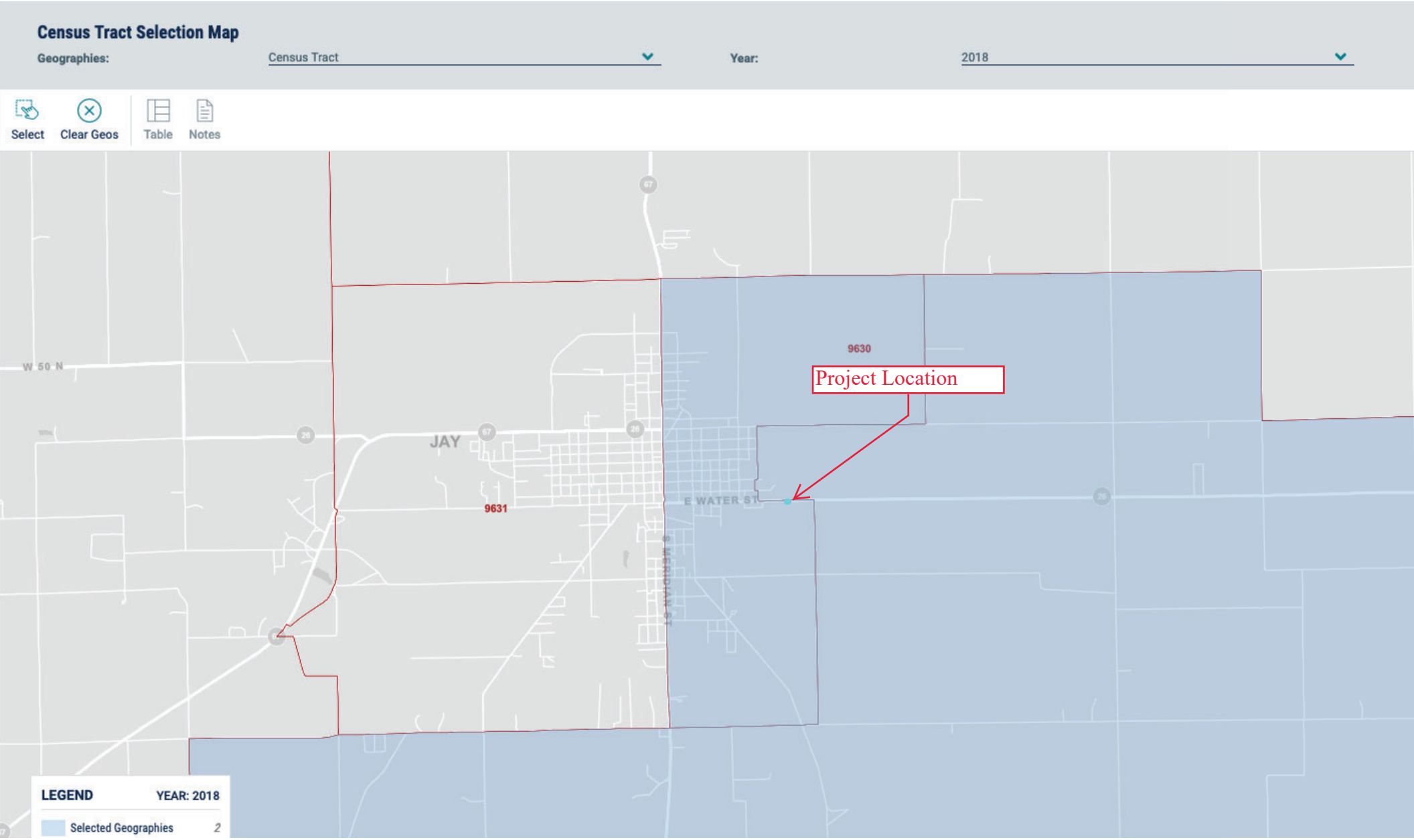
SR 26 over Salamonie River, Des. 1600828
County Map & Project Location



SR 26 over Salamonie River, Des. 1600828
Map of Project Location & Census Tract Boundaries



SR 26 over Salamonie River, Des. 1600828
Enlarged Map of Project Location & Census Tract Boundaries



HISPANIC OR LATINO ORIGIN BY RACE

Survey/Program: American Community Survey
TableID: B03002

Product: 2018: ACS 5-Year Estimates Detailed Tables
Universe: Total population

CUSTOMIZE TABLE

	Jay County, Indiana		Census Tract 9629, Jay County, Indiana		Census Tract 9630, Jay County, Indiana	
Label	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
Total:	20,993	*****	2,733	±232	2,301	±199
Not Hispanic or Latino:	20,353	*****	2,671	±228	2,076	±187
White alone	19,944	±21	2,655	±230	2,037	±180
Black or African American alone	90	±38	0	±11	13	±28
American Indian and Alaska Native alone	13	±23	0	±11	0	±11
Asian alone	45	±45	0	±11	12	±19
Native Hawaiian and Other Pacific Islander alone	1	±2	0	±11	0	±11
Some other race alone	0	±21	0	±11	0	±11
Two or more races:	260	±63	16	±19	14	±18
Two races including Some other race	0	±21	0	±11	0	±11
Two races excluding Some other race, and three or more races	260	±63	16	±19	14	±18
Hispanic or Latino:	640	*****	62	±80	225	±145
White alone	473	±155	62	±80	225	±145
Black or African American alone	0	±21	0	±11	0	±11
American Indian and Alaska Native alone	0	±21	0	±11	0	±11
Asian alone	0	±21	0	±11	0	±11
Native Hawaiian and Other Pacific Islander alone	0	±21	0	±11	0	±11
Some other race alone	128	±150	0	±11	0	±11
Two or more races:	39	±50	0	±11	0	±11
Two races including Some other race	10	±19	0	±11	0	±11
Two races excluding Some other race, and three or more races	29	±47	0	±11	0	±11

POVERTY STATUS IN THE PAST 12 MONTHS BY SEX BY AGE

Survey/Program: American Community Survey
TableID: B17001

Product: 2018: ACS 5-Year Estimates Detailed Tables
Universe: Population for whom poverty status is determined

CUSTOMIZE TABLE

	Jay County, Indiana		Census Tract 9629, Jay County, Indiana		Census Tract 9630, Jay County, Indiana	
Label	**Estimate**	**Margin of Error**	**Estimate**	**Margin of Error**	**Estimate**	**Margin of Error**
Total:	20,648	±101	2,724	±232	2,243	±201
Income in the past 12 months below poverty level:	3,482	±542	319	±142	295	±102
Male:	1,514	±311	98	±56	114	±55
Under 5 years	205	±88	18	±21	26	±23
5 years	23	±22	0	±11	0	±11
6 to 11 years	231	±132	2	±3	0	±11
12 to 14 years	84	±48	0	±11	4	±7
15 years	18	±17	0	±11	0	±11
16 and 17 years	65	±45	9	±14	10	±14
18 to 24 years	77	±41	0	±11	20	±24
25 to 34 years	167	±89	0	±11	40	±24
35 to 44 years	115	±50	17	±18	0	±11
45 to 54 years	122	±59	22	±24	6	±9
55 to 64 years	213	±66	0	±11	0	±11
65 to 74 years	126	±59	17	±18	8	±10
75 years and over	68	±35	13	±16	0	±11
Female:	1,968	±305	221	±102	181	±71
Under 5 years	210	±88	42	±39	17	±21
5 years	38	±29	0	±11	10	±12
6 to 11 years	134	±63	17	±22	8	±9
12 to 14 years	112	±66	1	±4	0	±11
15 years	53	±30	2	±4	7	±10
16 and 17 years	51	±35	20	±26	0	±11
18 to 24 years	113	±54	10	±17	35	±37
25 to 34 years	320	±95	22	±23	18	±16
35 to 44 years	185	±70	1	±4	17	±24

POVERTY STATUS IN THE PAST 12 MONTHS BY SEX BY AGE

Survey/Program: American Community Survey
TableID: B17001

Product: 2018: ACS 5-Year Estimates Detailed Tables
Universe: Population for whom poverty status is determined

CUSTOMIZE TABLE

	Jay County, Indiana		Census Tract 9629, Jay County, Indiana		Census Tract 9630, Jay County, Indiana	
Label	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
45 to 54 years	295	±122	74	±60	41	±38
55 to 64 years	144	±56	14	±16	11	±12
65 to 74 years	129	±59	0	±11	9	±9
75 years and over	184	±72	18	±18	8	±8
Income in the past 12 months at or above poverty level:	17,166	±546	2,405	±207	1,948	±186
Male:	8,719	±360	1,259	±154	963	±123
Under 5 years	580	±106	84	±47	70	±50
5 years	71	±49	3	±5	0	±11
6 to 11 years	773	±127	119	±64	99	±50
12 to 14 years	341	±79	69	±44	45	±26
15 years	113	±47	2	±4	0	±11
16 and 17 years	253	±63	29	±22	20	±19
18 to 24 years	812	±46	104	±43	110	±78
25 to 34 years	996	±124	114	±51	154	±54
35 to 44 years	1,004	±49	177	±47	101	±37
45 to 54 years	1,257	±66	151	±57	139	±42
55 to 64 years	1,189	±101	210	±66	90	±29
65 to 74 years	814	±60	135	±46	72	±29
75 years and over	516	±41	62	±36	63	±24
Female:	8,447	±293	1,146	±114	985	±124
Under 5 years	444	±94	50	±31	68	±40
5 years	62	±33	23	±27	4	±6
6 to 11 years	497	±87	76	±51	26	±21
12 to 14 years	520	±104	116	±41	41	±27
15 years	145	±56	12	±18	35	±33
16 and 17 years	256	±61	20	±23	39	±30
18 to 24 years	741	±52	66	±42	124	±56

POVERTY STATUS IN THE PAST 12 MONTHS BY SEX BY AGE

Survey/Program: American Community Survey
TableID: B17001

Product: 2018: ACS 5-Year Estimates Detailed Tables
Universe: Population for whom poverty status is determined

CUSTOMIZE TABLE

	Jay County, Indiana		Census Tract 9629, Jay County, Indiana		Census Tract 9630, Jay County, Indiana	
Label	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
Under 5 years	580	±106	84	±47	70	±50
5 years	71	±49	3	±5	0	±11
6 to 11 years	773	±127	119	±64	99	±50
12 to 14 years	341	±79	69	±44	45	±26
15 years	113	±47	2	±4	0	±11
16 and 17 years	253	±63	29	±22	20	±19
18 to 24 years	812	±46	104	±43	110	±78
25 to 34 years	996	±124	114	±51	154	±54
35 to 44 years	1,004	±49	177	±47	101	±37
45 to 54 years	1,257	±66	151	±57	139	±42
55 to 64 years	1,189	±101	210	±66	90	±29
65 to 74 years	814	±60	135	±46	72	±29
75 years and over	516	±41	62	±36	63	±24
Female:	8,447	±293	1,146	±114	985	±124
Under 5 years	444	±94	50	±31	68	±40
5 years	62	±33	23	±27	4	±6
6 to 11 years	497	±87	76	±51	26	±21
12 to 14 years	520	±104	116	±41	41	±27
15 years	145	±56	12	±18	35	±33
16 and 17 years	256	±61	20	±23	39	±30
18 to 24 years	741	±52	66	±42	124	±56
25 to 34 years	772	±99	103	±45	100	±37
35 to 44 years	979	±70	165	±52	144	±41
45 to 54 years	1,139	±113	148	±59	113	±43
55 to 64 years	1,234	±54	192	±55	115	±26
65 to 74 years	961	±68	137	±52	97	±32
75 years and over	697	±91	38	±27	79	±36

Subject: RE: EJ Analysis for Des 1600828 SR 26 over Salamonie River
Date: Thursday, December 31, 2020 at 12:25:33 PM Eastern Standard Time
From: Fair, Terri
To: Erin Mulryan
CC: Miller, Brandon, Bales, Ronald
Attachments: image001.png

the project may require minimal right-of-way, require no relocations, and would not disrupt community cohesion or create a physical barrier. With the information provided, INDOT-ESD would not consider the impacts associated with this project as causing a disproportionately high and adverse effect on minority and/or low incomes populations of EJ concern relative to non EJ populations in accordance with the provisions of Executive Order 12898 and FHWA Order 6640.23a. No further EJ Analysis is required.

From: Erin Mulryan <emulryan@sjcainc.com>
Sent: Monday, December 28, 2020 6:30 PM
To: Fair, Terri <TFair@indot.IN.gov>
Subject: Re: EJ Analysis for Des 1600828 SR 26 over Salamonie River

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Hi Terri, attached is the revised submission with the EJ standard language and suggestions below.

Thank You,
Erin Mulryan, MPA
Director of Environmental Services
SJCA Inc.
9102 N. Meridian St, Suite 200
Indianapolis, IN 46260
317-566-0629 (Main office); 317-634-4110 (Fountain Square office)
317-566-0633 (fax)
(Due to the coronavirus, I am working from home and can be reached on my cell, 317-525-1192)
emulryan@sjcainc.com

Appendix J
Historic Bridge Alternative Analysis

Note: The spans and bridge railing types of the currently proposed structure are different from the proposed structure discussed in the HBAA in Appendix J and Section 106 documentation in Appendix D because the new bridge's design was modified during project development. The spans proposed in the HBAA were 50, 100, and 50 feet and were redesigned to 70 feet each for consistency with typical structural design practice. The bridge railing was changed from FC to PF-1 and PS-1 to minimize bridge width and in accordance with customary practice for railings adjacent to sidewalks.

HISTORIC BRIDGE ALTERNATIVES ANALYSIS

BRIDGE NUMBER: 026-38-03430 B

DESIGNATION NUMBER: 1600828

ROUTE IDENTIFICATION AND FEATURE CROSSED:
SR 26 over Salamonie River

COUNTY: Jay County, Indiana

NBI NUMBER: 007040

PROJECT LOCATION: Jay County, Indiana

84º57'48", 40º25'57"

PREPARED BY:

CONSULTANTS, INC.
Engineers • Surveyors

DATE: February 11, 2020

DISCLAIMER:
This bridge was evaluated by personnel from the Indiana Department of Transportation (INDOT) Bridge Design Unit, the District Office and the designer. The attached Draft Historic Bridge Alternatives Analysis has been reviewed by the INDOT Bridge Design Unit and Cultural Resources Office for thoroughness of the rehabilitation option and compliance with INDOT design policies. Concurrence by INDOT with the proposed Scope of Work does not constitute Final Approval of the Historic Bridge Alternatives Analysis. This draft HBAA may now be distributed to the historic consulting parties for review.

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APPENDIX D – COST ESTIMATES AND QUANTITIES

- ALTERNATIVE B
- ALTERNATIVE C AND D
- ALTERNATIVE E AND F

APPENDIX E – 2017 STRUCTURE INVENTORY AND APPRAISAL

- 2017 FRACTURE CRITICAL STRUCTURE INVENTORY & APPRAISAL REPORT

APPENDIX F – LOAD RATING

- TRUSS ELEVATION – SCHEMATIC
- TYPICAL SECTION – SCHEMATIC
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II. EXISTING STRUCTURE DATA

This section provides a summary of the structural and geometric features of the existing SR 26 Bridge over Salamonie River.

A. Identification/History

Bridge No.:	026-38-03430 A
NBI Number:	007040
Project Location:	SR 26 over Salamonie River Jay County INDOT Greenfield District
Des. No.:	1600828
Project No.:	1600828
Year Built:	1941
Years Repaired:	1979
Most Recent Field Inspection:	August 29-30, 2017
ADT (2017):	2700 VPD
Design Year ADT (2037)	4010 VPD
Percentage of Commercial Vehicles:	16% (per 2017 SI&A)
Low Volume Road:	No
Functional Classification:	Rural Major Collector
Detour Length:	3 Miles
Load Rating:	HS Inventory – 28 tons H Inventory – 16 tons
Sufficiency Rating:	63.6
National Register of Historic Status:	Eligible
Historic Bridge Prioritization Status:	Non-Select
Historic Character Features:	This bridge is important as one of six or fewer examples of this bridge type within an INDOT district.

B. Structure Dimensions

Surface Type:	Concrete Deck
Out-to-Out Copings	29’-0”
Out-to-Out of Trusses	31’-6 1/2”
Out-to-Out of Bridge Floor	154’-8 1/2"
Clear Roadway Width:	28’-0”
Number of Lanes on Structure:	2
Vertical Clearance	14.64’
Skew:	0°
Superstructure Type:	310 B: Steel Parker Through Truss
Span Lengths:	One Span @ 150’-0”
Type of Substructure/Foundation:	Concrete Abutments on Spread Footings
Seismic Zone:	Zone 1

C. Appurtenances

Bridge Railing:	Non-standard steel bridge rail
Curbs:	6” x 6” concrete curb
Median:	None
Sidewalks:	None
Utilities:	Power poles w/aerial lines along north side of structure. Underground utilities were also noted.
Railroad:	N/A

D. Approaches

Clear Roadway:	28’-0”
Surface Type:	Chip and seal (asphalt)
Guardrail Type:	Two tube aluminum guard rail
Guardrail Transition Type:	None
Guardrail End Treatment Type:	Buried end treatment

E. Additional Information

Posted Speed Limit:	40 mph

III. EXISTING CONDITIONS

See the ground level photographs in Appendix B and the aerial photograph In Appendix C for existing conditions in the project area. See Appendix “E” for the 2017 Fracture Critical Report and the 2017 Structural Inventory and Appraisal Report for additional condition information.

A. Bridge Deck

1. **General:** Overall, the bridge deck is in fair condition with longitudinal and transverse cracks in the overlay and corroded metal stay in place (SIP) forms below deck. The bridge deck was replaced in 1975.

2. **Overlay:** The bituminous wearing surface has numerous wide transverse cracks over each interior floor beam. A few longitudinal cracks were noted at the west end of the deck. A few areas have fractured along the cracks.

3. **Surface Condition:** Although numerous cracks were noted, see Bridge Deck Overlay, item 2 above, the riding surface of the bridge is in satisfactory condition.

4. **Underside Condition:** The concrete deck is supported with metal stay in place (SIP) forms. Several areas of corrosion were noted at the corners, especially at the northeast end of the deck and along the edges of the floor beam upper flanges near the copings.

5. **Joints:** The SS joint at the west end has minor spalls along the steel edges. The BS-6 joint at the east end has several minor spalls along the joint edges.

6. **Site Drainage:** Bridge deck drains are open. The steel grate at one drain along the north curb line has been replaced with a steel plate.

7. **Bridge Railing:** The non-standard steel bridge rail is in fair condition with corrosion at the connections and section loss holes at the southeast and northwest corners. Minor collision rubs and scratches were observed on both railings.

8. **Curbs or Sidewalks:** The 6" curbs have numerous spalls with exposed reinforcement.

9. **Other:** N/A

B. Superstructure

1. **General:** The 7-panel Parker through truss is in fair condition.

2. **Repair/Maintenance Work:** All components of the superstructure appear to be original. No evidence of superstructure repair or significant maintenance work was observed.

3. **Specific Deficiencies – See Appendix E - Fracture Critical Report - for Itemized Details:**

   Stringers - Minor to moderate section loss to flanges and webs of fascia stringers in the end panels primarily at the stringer connections to floorbeams. Defects primarily on the exterior face of the fascia beams.

   Floor Beams – All floor beams have some pitting, rust, and/or deterioration at the ends at the lower lateral bracing gusset plate connections. No significant defects were noted on the interior sections of the floor beams.

   Verticals – Minor corrosion, pitting at railing connections and minor pack rust was noted on most vertical members.

   Diagonals – Minor corrosion, pitting and section loss were noted on several of the diagonal members. No significant defects.

   Lower Chords – Numerous areas of pitting, corrosion and minor to moderate section loss were noted along the lower chords.

   Upper Chords and End Post - Steel lacings bars at the northwest and southeast end posts have corrosion and major section loss or are missing over the lower +/- 8 feet. No other significant defects were noted.

   Gusset Plates (Vertical) - Numerous areas of pitting, corrosion and section loss were noted in the gusset plates. A few of the gusset plates are deformed due to pack rust.

   Connection Plates - Horizontal connection plates have moderate corrosion and section loss, especially at the southeast end post; pack rust causing some distortion at most locations. All lower lateral bracing gusset plates have pack rust and deformation at connections.

4. **Fracture-Critical Member or Low-Fatigue-Life Details:** Almost all of the diagonals, verticals and lower chord members are fracture critical. Members are either tension or subjected to stress-reversal. Floorbeam connections and the region within 12" of the connection are fatigue sensitive details.

5. **Damage:** No significant impact damage has been observed on this bridge. The east Portal has very minor impact damage. Minor scrapes along the existing bridge rail were observed.

6. **Bearings, Pedestals:** The concrete support block for the east end floor beam has spalled in the support area. Steel bearings are rusted, but functional.

7. **Other:** The bridge was last painted in 2000.

C. <u>Substructure:</u>

1. **General:** The abutments are in fair condition with horizontal and vertical cracks, delamination and spalls.

2. **Repair/Maintenance Work:** The substructure was repaired in 1979 at which time the mudwalls and bridge seats were replaced.

3. **Specific Deficiencies:**

   - The abutments have wide vertical and horizontal cracks, delaminations and spalls along the joint between the original concrete and the 1979 repair.
   - The concrete bridge seats and mudwalls have minor vertical cracks.

4. **Drainage:** Erosion and undermining were observed at the corners of the abutments. The concrete turnout/paved side ditches at the northeast and southeast corners have cracked and settled. Deep erosion gullies were noted at the river banks in front of both abutments.

5. **Scour:** The abutments sit several feet back from the channel. No evidence of scour at the abutments was observed.

6. **Other:** N/A

D. <u>Approaches:</u>

1. **General:** The approach roadway is in satisfactory condition with wide random cracks and minor rutting. The shoulders are narrow on all sides.

2. **Wedge:** The wedges were replaced in 2000.

3. **Approach Pavement:** The approach slabs have wide longitudinal cracks along the center construction joint.

4. **Approach Guardrail:** The approach guardrail, consisting of two tube aluminum railing, is substandard and leaning outward.

5. **Roadway Drainage and Pipe:** Adequate road drainage throughout project. No dedicated drainage structures are located within the scope of project limits.

E. **Sight Distance:** SR 26 is straight and flat on both sides of the bridge. The roadway grade is approximately 0.05%.

F. **Slopewalls:** No slopewalls are present.

G. **Miscellaneous:**

- Several utility poles with aerial power and telephone lines are located north of the structure.
- The channel has very heavy bank erosion, with many downed trees and exposed roots.
- No riprap or other channel protection was observed at or nearby the bridge.

IV. PROJECT'S PURPOSE AND NEED:

SR 26 over the Salamonie River, with a 28'-0" bridge roadway width, is a two lane, Parker steel truss. The grade of the roadway is approximately 0.05%, falling slightly from west to east. The bridge is currently rated for 16 tons (H Inventory Rating) and not posted for load. The reinforced concrete abutments are cracked with spalling, delamination and minor vertical cracks. Neither the existing bridge rail nor the approach rail meet Federal Highway Administration (FHWA) or INDOT current safety standards. (See IDM 49-6D(55).)

The purpose of the project is to restore the crossing of SR 26 over the Salamonie River to a satisfactory condition and increase the safe carrying capacity of the bridge from the current 28 tons to 36 tons (HS Operating Rating). Secondary purposes of the project include a bridge that can safely accommodate agricultural and emergency equipment and guardrail transitions and end treatments that meet current standards.

The primary need for the project is that the existing bridge does not meet current INDOT design criteria for capacity or shoulder width:

- Capacity: The bridge was designed to carry vehicles up to 20 tons but due to the structure's deterioration, current loads are limited to 16 tons. This means semi-tractor trailers, grain haulers, large farm equipment, large emergency vehicles, etc. are prohibited from using the bridge. The nature and volume of existing and proposed traffic on SR 26 necessitates that the bridge be capable of safely carrying modern highway loadings (36 ton vehicles) including commercial vehicles, grain haulers, school buses, and emergency vehicles.
- Roadway width: The bridge roadway carries two 11'-0" lanes with 2'-0" wide shoulders on each side of the roadway. Current INDOT design criteria requires a minimum lane width of 11'-0" with a desired width of 12'-0" and minimum shoulder width of 3'-0" with a desired width of 8'-0". Although the driving lane width meets minimum width criteria, the shoulders do not.

V. ALTERNATIVES:

Alternatives for this project were developed in accordance with INDOT's Historic Bridge PA PDP and include no build, rehabilitation, and replacement options, with and without relocation of the existing bridge. This analysis also meets the requirements of FHWA's *Programmatic Section*

4(f) Evaluation and Approval for FHWA Projects that Necessitate the Use of Historic Bridges (Nationwide Programmatic Section 4(f) Evaluation). Like the Historic Bridge PA PDP, this national agreement provides a framework for the evaluation of alternatives that avoid the use of the historic bridge; alternatives to be evaluated include: do nothing (i.e., no build), build on new location without using the old bridge, and rehabilitation without affecting the historic integrity of the bridge.

As stipulated in the Historic Bridge PA, an Alternatives Analysis was developed in accordance with INDOT's *Historic Bridge Alternatives Analysis Layout* (see Appendix I). Those alternatives satisfy the requirements of the Nationwide Programmatic Section 4(f) Evaluation as follows:

Nationwide Programmatic Alternative	**Historic Bridge PA PDP Alternative**
Do Nothing	No Build (Alternative A)
Build on new location without using the old bridge	One Way Pair (Alternative C) Bypass (Alternative D)
Rehabilitation without affecting historic integrity	Rehabilitation (Alternative B)
N/A	Replacement and Relocation of Existing (Alternative E)
N/A	Replacement and Demolition of Existing (Alternative F)

Since SR 26 over the Salamonie is a Historic Non-Select bridge, a demolition and replacement alternative was also investigated.

As described above, Section 4(f) and the INDOT Historic Bridge PA PDP require the systematic evaluation of alternatives for this project. The alternatives analysis must prove why each alternative either is or is not feasible and prudent, and it should document the justification for the decision to proceed with the preferred alternative. The regulations state that a potential avoidance alternative is not "feasible" if it cannot be built as a matter of sound engineering judgment (23 CFR 774.17), it is not possible to engineer, design and build. The term "prudent" means there are no unique problems or unusual factors involved with the use of such alternatives. Per 23 CFR 774.17, an alternative is not prudent if:

- It compromises the project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need;
- It results in unacceptable safety or operational problems;
- After reasonable mitigation, it still causes:
    - Severe social, economic, or environmental impacts;
    - Severe disruption to established communities;
    - Severe disproportionate impacts to minority or low income populations; or
    - Severe impacts to environmental resources protected under other Federal statutes;
- It results in additional construction, maintenance, or operational costs of an extraordinary magnitude;
- It causes other unique problems or unusual factors; or
- It involves multiple factors that while individually minor, cumulatively cause unique problems or impacts of extraordinary magnitude.

The Historic Bridge PA PDP establishes the criteria for determining feasibility and prudence for projects involving historic bridges in Indiana. The Historic Bridge PA PDP is available at: http://www.in.gov/indot/2531.htm.

Alternative A: No Build / Do Nothing

Alternative A is an avoidance alternative that would allow the existing structure to remain in place with no improvements. INDOT would continue its current inspection program to identify structural deficiencies and would address issues as required. This alternative would not use federal funds and no action would occur. The structure would continue to deteriorate. Without repairs to the deteriorating lower chord members and gusset plates and a new paint system to seal and slow corrosion, the bridge will probably require posting for load within the next 3-5 years. Should this structure become un-useable, a three (3) mile detour consisting of moderate volume roads is available.

With the bridge in its current condition, this alternative fails to meet the stated purpose and need for a structurally safe and sufficient bridge.

Alternative B: Rehabilitation of Existing Structure for Continued Vehicular Use (two-lane option) Meeting Secretary of Interior's Standards for Rehabilitation

This alternative would consist of rehabilitating the existing structure in accordance with the Secretary of Interior's Standards for Rehabilitation or as close to the Secretary's Standards as is practicable. See Alternative B in Appendix C.

The structure would continue to accommodate two-way traffic. The existing bridge would be repaired as necessary. Approach guardrail would be replaced with railing meeting current design standards.

FIGURE B: SUMMARY OF BRIDGE'S EXISTING DESIGN ELEMENTS AND APPLICABLE DESIGN CRITERIA:

Design Element	Design Manual Section	Minimum Design Criteria	Existing Condition	Proposed Condition	Design Exception Required
Travel Lane	55-6.02	12 ft	11 ft	11 ft	Yes
Shoulder	55-4.05	6 ft	2 ft	2 ft	Yes
Structural Capacity	Fig. 55-3B	HS-20 (36 tons)	HS-15 (28 tons)	HS-20 (36 tons)	No
Clear Roadway Width	55-6.02	28 ft	28 ft	28 ft	No
Vertical Clearance	55-6.02	N/A	N/A	N/A	N/A
Bridge Railing	49-6D(40)	TL-2	Not Tested	TL-2	Yes*
Vertical Alignment Stopping Sight Distance	412.5.03	N/A	N/A	N/A	N/A
Maximum Grade	55-4.04	10%	0.05%	0.05%	No

Use 3R Criteria, Existing Bridge to Remain in Place

*The bridge railing does not meet FHWA or INDOT current design criteria, is not crash tested and would require a design exception to be left in place. Per the Indiana Design Manual, article IDM 55-6.02 railing may be left in place only if the following conditions are met:

a. the project is a rehabilitation project on a non-NHS route;

b. the existing bridge railing and approach guardrail are considered to be satisfactory;

c. the accident history does not indicate that there may be a problem;

d. the design year AADT is less than 400; and

e. the design speed is 30 mph or lower.

Since conditions b (rail is in fair condition), d (AADT is 4010 vpd), and e (design speed is 40 mph) are not met, a design exception would not be granted. The existing bridge rail would be removed and replaced with an FC type barrier to meet current safety requirements.

Level 1 design exceptions would be required for inadequate lane width and inadequate width of shoulder. Since the bridge clear roadway and the approach roadway are both 28'-0", a design exception to leave the current travel lane and shoulder width would likely be granted.

No additional right of way will be required for this alternative. Since the work will be performed over a waterway, various permits will be required. With a drainage area of approximately 46 square miles, this project will require an IDNR Construction in a Floodway Permit. An IDEM Section 401 Water Quality Permit and a USACE Section 404 Permit will be required if any work is to be performed below the Ordinary High Water Mark. An IDEM Rule 5 Permit is not anticipated since the disturbed area will likely be less than one acre for the rehabilitation project.

A review of the fracture critical inspection and the current load rating analysis shows that the following members contribute to the insufficient load capacity:

- South Truss - Lower Chord member L0L1 – Heavy corrosion and pitting of the member within the end 1'-0" of the beam.
- South Truss – Lower Chord member L6L7 – Heavy corrosion and moderate section loss of the end of the beam below the southeast end post
- North Truss - Deteriorated gusset plate at Panel Point L3.
- Rivets in the gusset plates have lower capacity than the truss members they connect:
    - U1 and U6 (vertical members U1L1 an U6L6) in both trusses.
    - U1 and U6 (diagonals U1L2 and L5U6)

Load Rating Results - Damaged Condition

Truss	Member	H Rating (Tons)	H Operating (Tons)	HS Inventory (Tons)	HS Operating (Tons)
South Truss	L0L1	21	35	38	63
South Truss	L6L7	16	27	28	48
North Truss	Gusset Plate at L3	61	101	61	101
North Truss	L2U1	17	29	34	57
North Truss	L5U6	17	29	34	57
North and South	Rivets at U1 (U1L1)	16	29	28	46
North and South	Rivets at U6 (U6L6)	16	29	28	46

Repair or replacement of the deteriorated truss members with similar strength steel of the same size and replacing existing rivets with high strength bolts in key locations would bring the bridge to compliance with the structural capacity criteria and would meet the Secretary of Interior's Standards for Rehabilitation.

Load Rating Results – Repaired

Truss	Member	H Rating (Tons)	H Operating (Tons)	HS Inventory (Tons)	HS Operating (Tons)
Minimum Capacity Required		**20**		**36**	**45**
South Truss	L0L1	23	39	42	70
South Truss	L6L7	23	39	42	70
North Truss	Gusset Plate at L3	67	111	120	201
North Truss	L2U1	26	44	47	79
North Truss	L5U6	26	44	47	79
North and South	Rivets at U1 (U1L1)	27	46	43	73
North and South	Rivets at U6 (U6L6)	27	46	43	73

Substructure repairs for this alternative would include repairs to the abutments including removing loose concrete, cleaning exposed reinforcement and patching the concrete.

Additional repairs to the superstructure include a full deck replacement (existing deck is 40 years old), replacing missing lacing bars at the endposts, replacing approximately 10% of the stringers due to deterioration; replacing the existing bridge rail with FC rail, and cleaning and painting the entire structure. The current paint system is approximately 20 years old. Since the most recent painting was in 2000, the paint in place is probably not lead based paint.

SR 26 over the Salamonie River, built in 1941 by the Yost Brothers of Decatur, Indiana is an example of an Indiana State Highway Commission (ISHC) standard plan for a moderately-long span bridge. This version of the standard plans relied heavily on rolled I beams in the webbing and lower chord members. Replacement or repair of damaged members will have minimal impact on the overall appearance of the structure. Only two lower chord members are proposed for replacement. Stringers are not considered "character defining" members. No significant changes to the historic character defining members of the bridge are proposed.

The most significant component of rehabilitating the existing bridge is the cost of cleaning and painting. Cleaning the bridge, including collection and disposal of the removed paint, protection of the Salamonie River, and painting the bridge, are anticipated to cost between $350,000 and $400,000.

The estimated cost to rehabilitate the existing bridge is $925,300.00. Preliminary costs for a replacement bridge along the existing alignment (shown in Alternative F) are $1,158,300.00, making rehabilitation costs approximately 80% of replacement costs. In addition, the steel through truss requires special inspection procedures and equipment for fracture critical members and fatigue sensitive details.

Although most minimum design standards can be met and design exceptions for insufficient travel lane and shoulder width would likely be granted, this alternative is not prudent for a Non-Select structure since initial rehabilitation costs are 80% of the initial replacement costs.

Since the repairs described in Alternative B, with design exceptions, meet the Secretary of Interior's Standards, Alternative B2 (not meeting the Secretary of Interior's Standards) will not be investigated.

Alternative C: Rehabilitation of Existing Structure for Continued Vehicular Use (one-way pair option) Meeting Secretary of Interior's Standards for Rehabilitation with Construction of New One-Way Structure with Construction of New One-Way Structure

This alternative would consist of rehabilitating the existing structure in its current configuration, accommodating one-way traffic and constructing a new one-way structure. This alternative would rehabilitate the existing truss structure for continued vehicular use with one lane of traffic and would require the same repairs to the existing structure as noted in Alternative B. Since the repairs described in Alternative B meet the Secretary of Interior's Standards, Alternative C2 (not meeting the Secretary of Interior's Standards) will not be investigated.

In addition to rehabilitating the existing structure, a new three-span, one-way structure would be constructed to the north of the existing structure on a parallel alignment (See Appendix C, Alternate C & D). The new bridge would be designed for future two-way use and would meet all current INDOT design criteria. The new bridge is assumed to consist of three spans at 50', 100' and 50' to provide adequate hydraulic capacity for the crossing.

Since the work would be performed over a waterway, various permits would be required. With a drainage area of approximately 46 square miles, this project would require an IDNR Construction in a Floodway Permit. An IDEM Section 401 Water Quality Permit, a USACE Section 404 Permit if any work is to be performed below the Ordinary High Water Mark and an IDEM Rule 5 Permit would be required for this project.

The new one-way bridge would require approximately 0.636 acres of additional right-of-way. The right-of-way required is currently occupied by farm fields, forested areas and residential properties. The estimated cost of purchasing additional right-of-way is approximately $15,000 based on property value only.

The approximate project length for this alternative is 1,200 feet long. The new bridge was assumed to be a three-span concrete structure with prestressed bulb tee beams for this analysis. The estimated construction cost a new one-way parallel structure is approximately $1,343,000. The total estimated cost, including Right-of-Way, for Alternative C is $1,358,000

This alternative would include the cost of rehabilitating the existing truss in addition to the cost of a new bridge (Alternative F) on a new roadway alignment and right of way acquisition. Although this alternative is feasible it is not prudent.

Alternative D: Bypass (non-vehicular use) / Build New Structure without Affecting the Historic Integrity

This alternative would consist of rehabilitating the structure for pedestrian use in accordance with the Secretary of the Interior's Standards for Rehabilitation (Secretary's Standards) or as close to the Secretary's Standards as practicable and per the Historic Bridge Programmatic Agreement Section 4(f) evaluation.

The existing bridge would be repaired as described in Alternative B. In addition to rehabilitating the existing structure, a new three-span, two-way bypass structure would be constructed to the

north of the existing structure on a parallel alignment (See Appendix C, Alternate C & D). The new bridge would be designed to meet all current INDOT design criteria. The new bridge is assumed to consist of three spans at 50', 100' and 50' to provide adequate hydraulic capacity for the crossing. The typical bridge cross section would consist of two 11' travel lanes adjacent to 4'-0" shoulders for a clear roadway width of 30'-0". Bridge railing would be type FC bridge railing. The out to out width at the bridge coping would be 33'-0".

Since the work would be performed over a waterway, various permits would be required. With a drainage area of approximately 46 square miles, this project would require an IDNR Construction in a Floodway Permit. An IDEM Section 401 Water Quality Permit, a USACE Section 404 Permit if any work is to be performed below the Ordinary High Water Mark and an IDEM Rule 5 Permit would be required for this project.

The new bypass bridge structure would require approximately 0.636 acres of additional right-of-way. The right-of-way required is currently occupied by farm fields, forested areas and residential properties. The estimated cost of purchasing additional right-of-way is approximately $15,000 based on property value only.

The approximate project length for this alternative is 1,200 feet long. The new bridge was assumed to be a three-span concrete structure with prestressed bulb tee beams for this analysis. The estimated construction cost a new two-way bypass structure is approximately $1,343,000. The total estimated cost, including Right-of-Way, for Alternative D is $1,358,000. Note, the cost of rehabilitation of the existing bridge is not included in this alternative since the Historic Bridge Programmatic Agreement states that a responsible party *other than the owner* must come forward before the end of the public hearing comment period to assume liability and fund preservation and maintenance of the bridge for this alternative to be feasible.

The new construction cost is 117% of the cost for replacement (Alternative F). For a Non-Select bridge, this alternative is prudent only if a responsible party other than the owner comes forward to fund the relocation, rehabilitation and maintenance of the bridge.

Alternative E: Relocation of Historic Bridge and New Bridge Construction

Alternative E would consist of relocating and rehabilitating the structure for pedestrian use in accordance with the Secretary of the Interior's Standards for Rehabilitation (Secretary's Standards) or as close to the Secretary's Standards as practicable and per the Historic Bridge Programmatic Agreement Section 4(f).

In addition to relocating and rehabilitating the existing structure, a new three span, two-way structure would be constructed on the existing alignment. The new structure would be a two-lane structure consisting of three spans at 50', 100' and 50' to provide adequate hydraulic capacity for the crossing. The typical bridge cross section would consist would consist of two – 11' travel lanes adjacent to 4'-0" shoulders for a clear roadway width of 30'-0". With FC railing, the out to out at the coping of bridge would be 33'-0". The approximate project length for this alternative is 1,000 feet along SR 26.

Since the work will be performed over a waterway, various permits will be required for the project. These include a Certificate of Approval for Construction in a Floodway (drainage area of 46 square miles), a Section 401 Indiana Department of Environmental Management permit and a Section 404 Army Corps of Engineers permit. An IDEM Rule 5 Permit is not anticipated since the disturbed area would likely be less than one acre for the replacement project.

The estimated construction cost of the replacement structure is approximately $1,158,300. No additional right of way would be required for this alternative. The existing structure, in accordance with INDOT's Cultural Resource Manual, Chapter 2-1.0, would be advertised for a minimum period of six months to allow any interested individual(s) or group(s) the opportunity to assume responsibility for the bridge and fund the relocation, rehabilitation and maintenance of bridge.

This alternative is feasible, meeting all current INDOT design standards. For a Non-Select bridge, this alternative is prudent only if a responsibility party *other than the owner* comes forward to fund the relocation, rehabilitation and maintenance of bridge.

Preferred Alternative F: Replacement – Demolition of Historic Bridge and New Bridge Construction

Alternative F would consist of demolishing the existing bridge and constructing a new structure meeting all current INDOT design criteria along the existing alignment. A replacement structure would consist of three spans at 50', 100' and 50' to provide adequate hydraulic capacity for the crossing. The typical section would consist of two 11'-0" travel lanes with 4'-0" shoulders for a clear travel way of 30'-0". Bridge railing would be type FC concrete barriers. The out-to-out measurement of the bridge deck would be 33'-0". Two wall piers and end bents would support the structure. The approximate project length for this alternative is 1,000 feet along SR 26. The estimated construction cost of the replacement structure is approximately $1,158,300. No additional right of way would be required for this alternative.

Since the work would be performed over a waterway, various permits would be required for the project. These include a Certificate of Approval for Construction in a Floodway (drainage area of 46 square miles), a Section 401 Indiana Department of Environmental Management permit and a Section 404 Army Corps of Engineers permit. An IDEM Rule 5 Permit is not anticipated since the disturbed area would likely be less than one acre for the replacement project.

The existing structure, in accordance with INDOT's Cultural Resource Manual, Chapter 2-1.0, would be advertised for a minimum period of six months to allow any interested individual(s) or group(s) the opportunity to purchase and assume responsibility for the bridge.

This alternative is feasible, meeting all current INDOT design standards. If no responsible party other than the owner comes forward to fund relocation, preservation, and maintenance of the bridge, this alternative is prudent.

SUMMARY OF ALTERNATIVE COSTS:

Alt No.	Structure Rehabilitation Cost	New Structure Cost	R/W Req'd (Cost)	Total Cost
A-No Build	$0.00	$0.00	$0.00	$0.00
B-Rehabilitation for Continued Vehicular Use (two-way or one-way option)	$962,300	$0.00	$0.00	$962,300
C-Rehabilitation for Continued Vehicular Use (one-way pair option)	$962,300	$1,343,000	0.636 ac. ($15,000)	$2,305,300
D - Bypass (non-vehicular use)	N/A	$1,343,000	0.636 ac. ($15,000)	$1,358,000
E-Relocate	N/A	$1,158,300	$0.00	$1,158,300
F-Replace	N/A	$1,158,300	$0.00	$1,158,300

Note: Estimated costs do not include cost of utility relocation.

VI. MINIMIZATION AND MITIGATION

A. The following measures have been considered in order to minimize harm to the existing, historic bridge for any alternative involving rehabilitation:
   - For those alternatives meeting Secretary of Interior's Standards for Rehabilitation, alterations to the superstructure would not significantly change the geometry or appearance of the bridge.
   - Repairs to the structure would be made "in-kind", using similar materials. Since the bridge was originally constructed in 1941, similar steel shapes and sizes are readily available.
   - Rivets that need to be replaced to strengthen members would be replaced with round headed bolts rather than polygonal-headed bolts.
   - A design exception would be pursued to maintain the existing bridge railing and shoulder width.

B. The bridge will be marketed for reuse/rehabilitation beginning at a date yet to be determined. Advertisements will be placed in a statewide newspaper, a local newspaper, and on the INDOT website. Signs will posted at the bridge site at a date yet to be determined. Marketing will take place for a minimum of six months and will not conclude until the comment period for the public hearing is over.

C. The Indiana SHPO will be consulted to determine if photo documentation of the bridge is needed.

D. INDOT will salvage elements that may be stored and used for future repair of similar historic bridges if an interested and responsible party is identified during the bridge marketing phase of project development.

VII. PRELIMINARY PREFERRED ALTERNATIVE

Alternative F is the preferred alternative: Replacement – Demolition of Historic Bridge and New Bridge Construction

Alt No.	Meets Purpose and Need?	Construction Cost	ROW Amount & Cost	Other Factors	Feasible and Prudent?
A-No Build	No	NA	NA	The existing bridge does not meet existing structural capacity requirements.	The alternative is not prudent because it does not meet the project purpose and need. The bridge does not meet acceptable load capacity, especially considering the volume of truck and farm equipment traffic.
B1-Rehabilitation for Continued Vehicular Use (two-way option)	Yes	$962,300	0	Replacement or repair of damaged members would have minimal impact on the overall appearance of the structure. No significant changes to the historic character defining members of the bridge are proposed. A level 1 design exception for bridge rail would likely be granted.	The alternative is feasible. This alternative is not prudent because rehabilitation costs are 80% of the replacement costs.
C-Rehabilitation for Continued Vehicular Use (one-way pair option)	Yes	$2,305,300	0.636 ac. ($15,000)	Additional Right of Way acquisition would be required for the one-way bypass bridge.	This alternative is feasible but not prudent, due to combined costs of rehabilitation, new construction and additional right-of-way costs.
D - Bypass (non-vehicular use of existing bridge)	Yes	$1,343,000	0.636 ac. ($15,000)	Additional Right of Way acquisition would be required for the two-way bypass bridge. The bridge must be marketed per the Historic Bridge PA and a responsible party other than owner must come forward to fund the rehabilitation and maintenance of bridge.	This alternative is feasible but not prudent, due to cost of new construction and additional right-of-way costs. In addition, a responsibility party other than the owner must forward to fund the relocation, rehabilitation and maintenance of bridge.
Alternative E: Relocation of Historic Bridge and New Bridge Construction	Yes	$1,158,300	0	The bridge must be marketed per the Historic Bridge PA. A responsible party other than owner must come forward to fund the relocation, rehabilitation and maintenance of bridge.	This alternative is prudent only if a responsibility party other than the owner comes forward to fund the relocation, rehabilitation and maintenance of bridge.
Alternative F: Replacement – Demolition of Historic Bridge and New Bridge Construction	Yes	$1,158,300	0	The bridge must be marketed per the Historic Bridge PA.	This alternative is feasible, meeting all current INDOT design standards. If no responsible party other than the owner has come forward to fund relocation, preservation, maintenance of the bridge, the alternative is prudent.

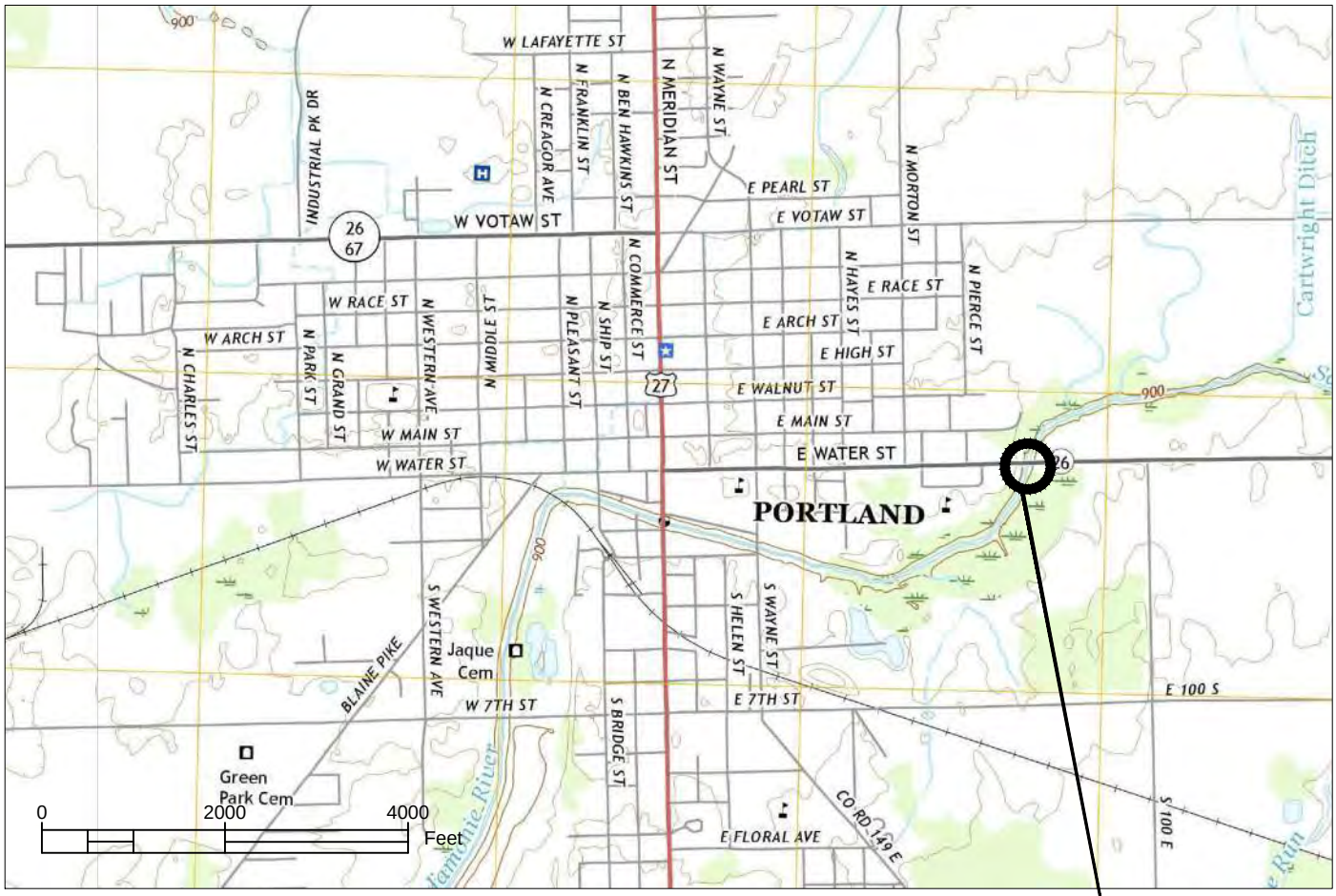
Appendix A
Maps

8415 E. 56th Street
Indianapolis, Indiana 46216
Phone: (317) 544-4996
Fax: (317) 544-4997

INDOT GREENFIELD DISTRICT
BRIDGE: 026-38-03430 A

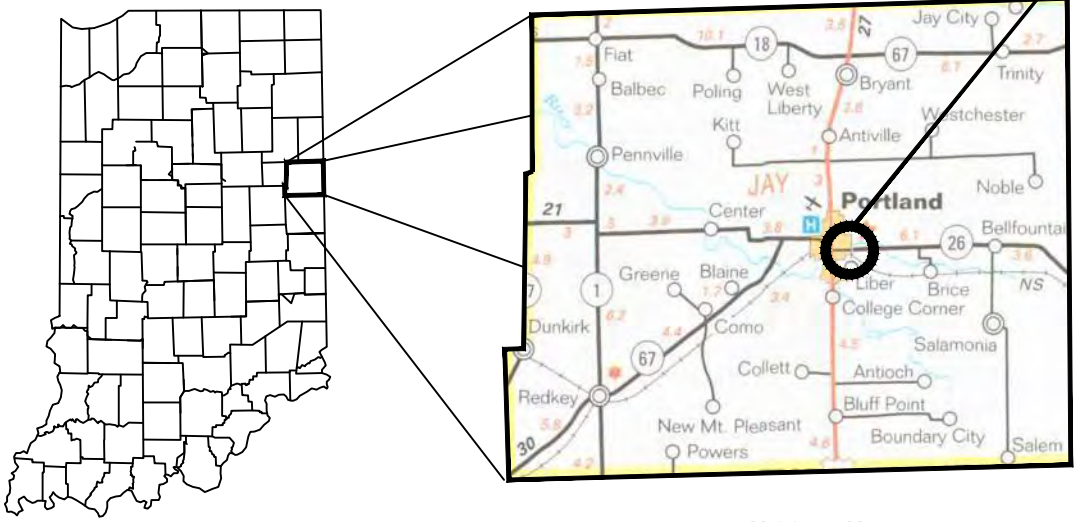
LOCATION MAP
SR 26 over Salamonie River

HORIZONTAL SCALE	BRIDGE FILE
1" = 2000'	026-38-03430 A
VERTICAL SCALE	DESIGNATION
n/a	1600828
SURVEY BOOK	SHEETS
	1 of 1
CONTRACT	PROJECT
	2017-102



Section 21, Township 23 N, Range 14 E
Wayne Township, Jay County, Indiana

PROJECT SITE



JAY COUNTY

Appendix B
Photographs

026-38-03430 A
SR 26 over Salamonie River
Alternative Analysis Report – Photo Pages

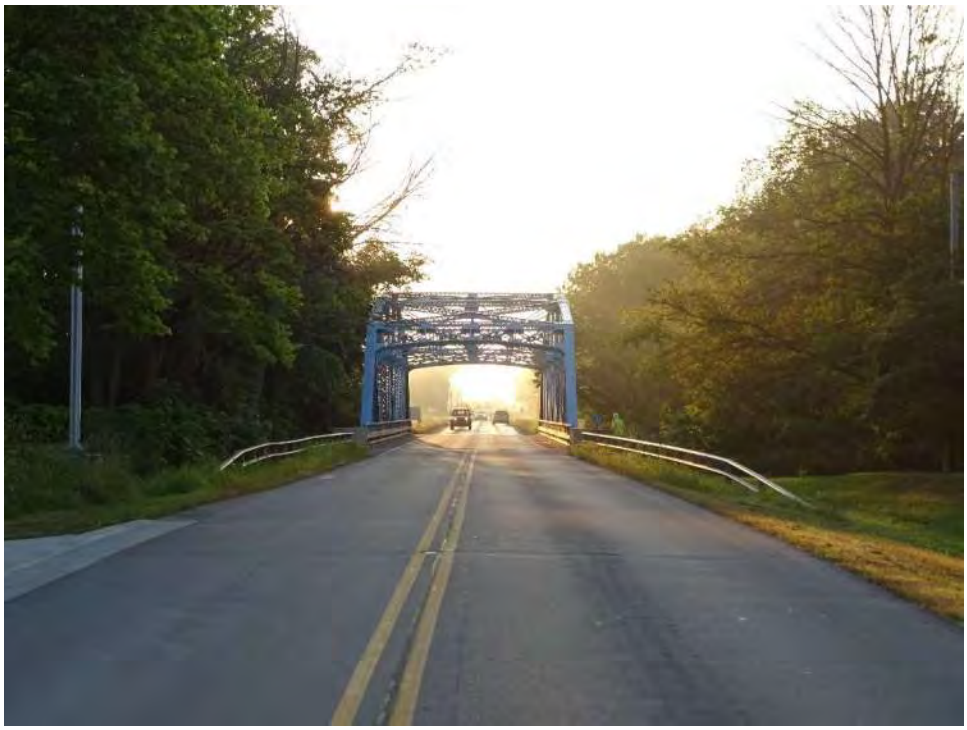


Photo 1: West Approach Looking East

Photo 2: East Approach Looking West

026-38-03430 A
SR 26 over Salamonie River
Alternative Analysis Report – Photo Pages

Photo 3: South Face Looking North

Photo 4: North Face Looking South

026-38-03430 A
SR 26 over Salamonie River
Alternative Analysis Report – Photo Pages

Photo 5: Looking West at Abutment 1

Photo 6: Looking East at Abutment 2

026-38-03430 A
SR 26 over Salamonie River
Alternative Analysis Report – Photo Pages

Photo 7: Floor System

Photo 8: Aerial View of Truss

See Appendix C – 2017 Structure Inventory and Appraisal Fracture Critical Report for additional condition photos.